Industrial Equipment News

FOUNDED 1933

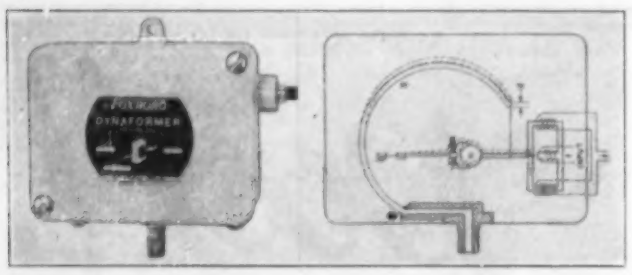
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 1**

GAGE . . Pressure transducer converts fluid pressure to ac. voltage

Source: FOXBORO COMPANY
42 Neponset Ave., Dept. IEN, Foxboro, Mass.



Technical Report T127-A-12a

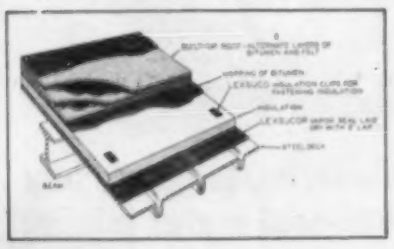
Dynaformer Pressure Cell is a new sensitive element that converts fluid pressure into a proportional ac. voltage to be measured in terms of pressure by a Foxboro electronic resistance Dynalog instrument. The unit consists of a Bourdon pressure spring linked to a copper ring which surrounds the iron core of a differential transformer. The spring, responding to fluid pressure, positions the ring to induce a differential voltage, proportional to the fluid pressure, in the output winding of the transformer. Accuracy is within 0.25 per cent at any point. Protection is provided against 150 per cent over-range. Any pressure, from 0 to 30 in. of mercury and 0 to 10,000 lb., can be specified.

Assembly is in a splash proof rubber gasketed cast aluminum housing with a pressure tight cable connection. Electrical components, with the exception of the iron core of the transformer, are imbedded in plastic for protection against moisture. Three mounting lugs permit the cell to be installed in any position. Maximum operating temperature is 170 deg. F. The cell is suited particularly for use in hazardous areas because of its pressure tight cable connection and its plastic imbedded electric components.

If you write maker identify as **IEN - 2**

ROOFS . . Fire retardent design prevents flammable asphalt drip

Source: LEXSUCO INCORPORATED
4815 Lexington Ave., Dept. IEN, Cleveland 3, Ohio



Safe and economical

Lexsucor trade names a new vapor seal that is employed in the company's fire retardent roof design in the place of flammable asphalt in asphalt saturated roofing felts. The seal applies in normal position between the steel deck and the insulation on it. It and the insulation are held in place by Lexsuco clips, hammer driven through the steel deck. The clips clinch to hold on the under side of the deck. They are free to move down and return if they are stepped upon without tearing the insulation or the seal.

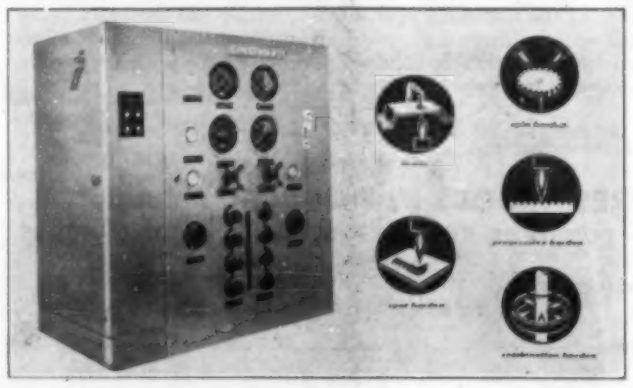
Fire retardent Koroseal manufactured by B. F. Goodrich Company is supplied in rolls 54 in. in width by 300 yd. in length and 4 mils in thickness. A roll weighs about 80 pounds. The film is laid dry with 2-in. laps that are cemented with Lexsucor lap cement. Then the insulation is clipped in place and alternate layers of bitumen and felt are applied on it.

JOIN THE MARCH OF DIMES TO FIGHT INFANTILE PARALYSIS

If you write maker identify as **IEN - 3**

HEATING . . Gas flame equipment for hardening and brazing operations

Source: CINCINNATI MILLING MACHINE CO.
Marburg & Kline Sts., Dept. IEN, Cincinnati 9, Ohio



Illustrated data in Catalog M-1824

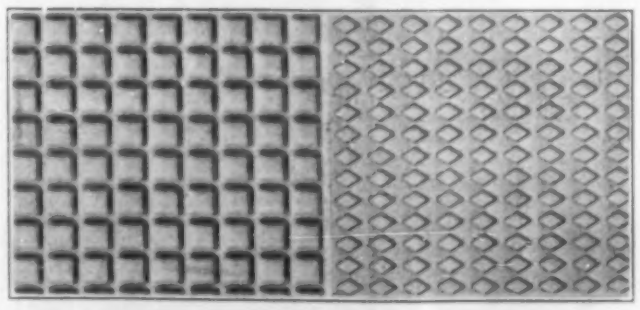
Illustrated is a control unit that has been added to the Flamatic equipment for heating, quenching and brazing operations, previously described IEN-13003-48. The new control is available to supply 2, 4 or 6 mixed gas circuits. The largest has maximum capacity of 4,500,000 btu. per hour. Fuel gas and oxygen are metered for exact control of heat input. Cooling and quenching water is controlled to provide the correct pressure. Air to actuate cylinders and electric power for automatic cycling also can be regulated through the new assembly.

Setups can be made on companion equipment the company also is prepared to supply to perform operations on given work. These units can be connected into the control and used selectively, the operator going from one job to another without dismantling the tooling and then returning and re-running any one of the units.

If you write maker identify as **IEN - 4**

METALS . . Design strengthened patterns are added to Rigid-Tex line

Source: RIGIDIZED METALS CORP.
664 Ohio St., Dept. IEN, Buffalo 3, N. Y.



Rolled into flat sheet to your order

Patterns 1-SQ, to the left in the illustration, and 2-DD to the right, have been added to the patterns previously developed in the Rigid-Tex line of three dimensional design strengthened metals. Both new patterns are suited for a variety of applications such as automobile and appliance trim, scuff plates, door hardware, area coverage requiring a combination of eye-appeal, strength, light weight and mar resistance.

Pattern 1-SQ can be specified in ferrous or non-ferrous metals, solid or perforated, sheet, strip and coil in widths to 8 inches. Pattern 2-DD is available in widths to 7 inches. Four finishes include mill finish as rolled, mill finish with highlights, colorized and highlighted, painted or porcelain enameled without highlights. The reverse side of the rolled sheet provides additional effects. The two patterns can be matched readily in fabrication or installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

JANUARY, 1954
VOL. 22 No. 1

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- ☐ .....

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Address:
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A. J. GRANICK, Reader Service Manager
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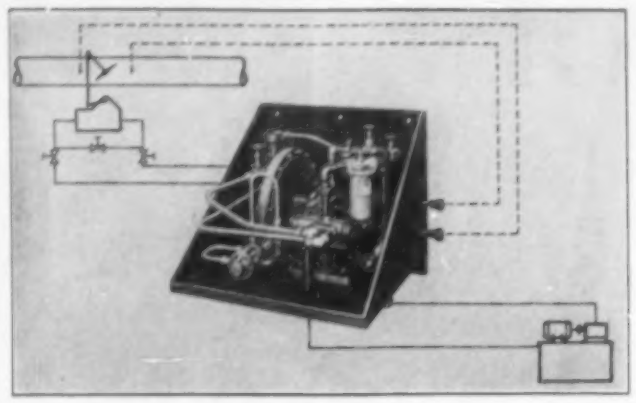
If you write maker identify as IEN - 5

CONTROL . . Hydraulic operator applies butterfly valve in check duty

Source: ASKANIA REGULATOR CO.
240 E. Ontario St., Dept. IEN, Chicago 11, Ill.



Bulletin 160

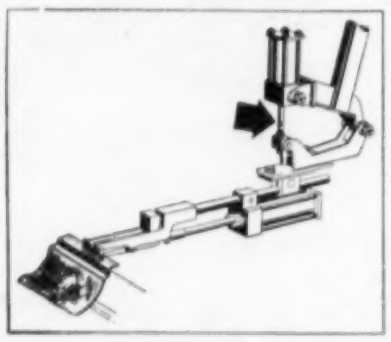
New adaption of the company's Jet Pipe regulator, with its motor driven hydraulic power unit and crank type cylinder powered operator, permits control of large tight closing butterfly valves for non-return or check duty. The control connects on the two sides of its actuating diaphragm to the up-stream and down-stream sides of the butterfly valve so differential pressure, developed by fluid flow through the valve, acts on the diaphragm to create a force. This force is applied to one side of the Jet Pipe and a spring is applied to the other side to balance the diaphragm with the valve wide open.

Operation of the Jet Pipe controls position of a hydraulic valve which, in turn, applies pressure on one side or the other of the hydraulic operator to position the butterfly valve so it will maintain a constant low differential pressure, minimum at 1 in. of water column. Reversal of the pressure results in closing the valve positively and quickly.

If you write maker identify as IEN - 6

PRESS TOOLS . . Pneumatic unloader removes completed work from a press

Source: SAHLIN ENGINEERING CO.
265-69 Ferndale St., Birmingham, Mich.



Floating Mechanism

A pivoted arm and an auxiliary air cylinder, now available on the company's Iron Hand unloading mechanism, previously described IEN-9345-50, permits lifting a work part vertically through 20 in. before it is swung back and out of a press by the main mechanism. The new arrangement increases the normal vertical lift by 12 in. to handle deep drawn work or parts with downward projections that would interfere with the normal 4 to 8 in. vertical movement. In each case, a finger or hand reaches into the press, grips the work, lifts it from the die and moves it out of the press for deposit on a truck or conveyor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7

It can lift 25 tons* up to 5 inches is only 10 inches high, weighs 38 lbs.

The "Mighty Mite" (No. 2510-C-2)
**other sizes handle 10 to 50 tons*

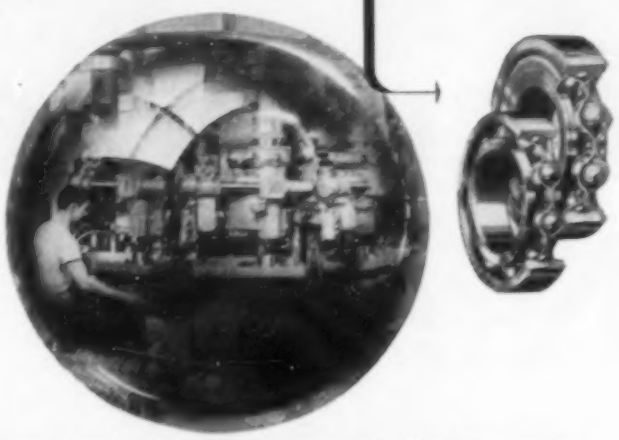
This precision made, ball-bearing journal jack is a favorite in industrial plants, construction and engineering companies, building movers, railroads and ship yards. The "Mighty Mite" is easy to carry, simple to operate, quickly raised and lowered, and is absolutely safe and dependable. It can be operated on any plane. A solid steel handle (1⅛" x 36") with pinch bar ends, which can be used as a pry bar, is furnished with each jack.

Call your distributor for complete details and information on prices and delivery or write the oldest and largest manufacturers of lifting jacks for bulletin AD12-M, The Duff-Norton Manufacturing Co., P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS
"Giving Industry A Lift Since 1883"

If you write maker identify as IEN - 8

Money Savers in Motors and Machinery



Throughout industry, engineers specify New Departure **ball** bearings for top performance. New Departures take radial and thrust loads—or *any* combination . . . preserve alignment . . . reduce friction . . . require no adjustment for wear!

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NEW DEPARTURE
BALL BEARINGS

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Snuffing out a fire is easy when you have a Kidde carbon dioxide portable handy. Just pick up, point the horn, pull the trigger. A cloud of CO_2 smothers the fire instantly.

Kidde
Walter Kidde & Company, Inc.
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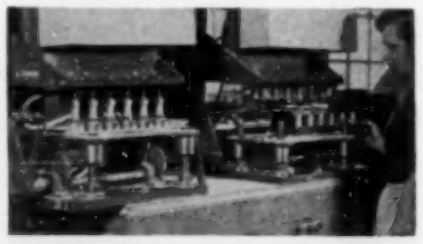
EASY-FLO AND SIL-FOS
LOW-TEMPERATURE SILVER ALLOY BRAZING

...the Modern Designer's key to fast, low-cost metal joining

It's the process that assures metal joints fully as strong and resilient as the metals joined . . . metal joints that are liquid- and gas-tight, high in electrical and heat conductivity and resistance to corrosion. It's the process that joins thin metals without danger from overheating . . . the process that makes it easy to get any brazing production you want with unskilled labor.

TYPIFYING the fast, low-cost production possibilities of EASY-FLO and SIL-FOS brazing is this set-up for joining a brass sleeve to a stamped steel lock case. Parts are positioned in jigs with alloy rings preplaced—then induction-brazed 6 at a time in 31 seconds. Unskilled labor does it.



GET THE FULL STORY IN BULLETIN 20
It gives complete facts about EASY-FLO and SIL-FOS brazing plus valuable data on joint design and fast production brazing methods. Write for a copy today.

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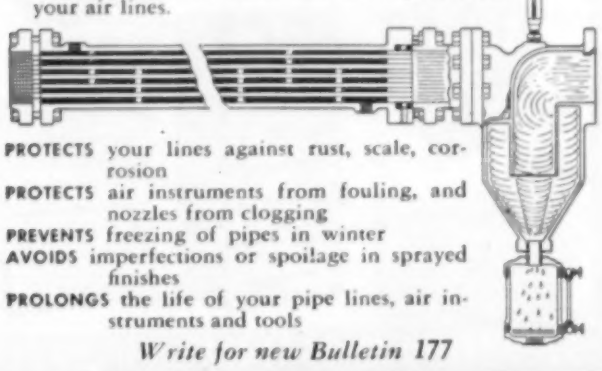
3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
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AVOIDS imperfections or spoilage in sprayed finishes
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Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

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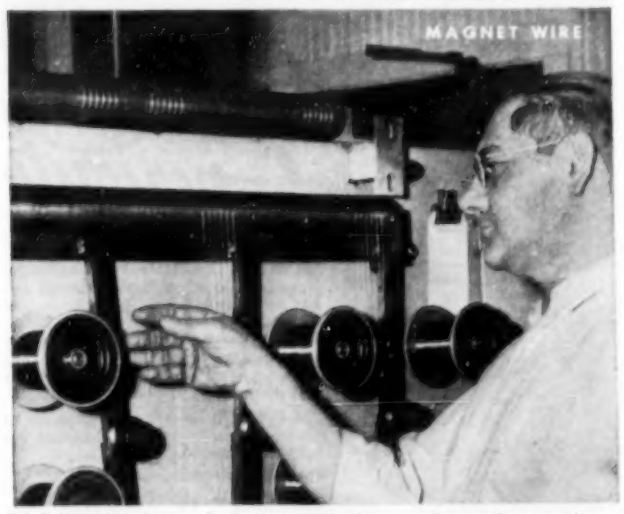

Ed Schwerske, Anaconda Inspector, checks enamel wire for smoothness.

He keeps harping...on quality

The only practical way to make magnet wire that is perfect for commercial applications is under strict quality control procedures. At Anaconda, quality is determined by statistical limits—or fences—beyond which no phase of production may stray. The narrower the control limits, the better the wire. These limits—at Anaconda—are the most exacting in the industry.

Anaconda makes a complete line of magnet wire—any type, size or shape. Your special needs will be given special attention.

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53362

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BROWNING MANUFACTURING COMPANY MAYSVILLE, KENTUCKY, U.S.A.

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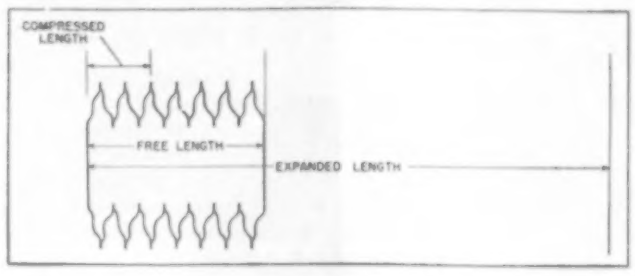
BELLOWS . . Metal diaphragms in welded assembly to specification

Source: TITEFLEX INCORPORATED
500 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.



Bulletin 300

Nesting design has been added to the company's standard male design of metal bellows, previously described IEN-8433-51. Both designs distribute flexing over the height of the convolutions to avoid concentration of stress and to minimize the chance of work hardening that might lead to failure. The new nesting type comprises a series of elements welded together for applications requiring high flexibility. This design is particularly suited for air and steam lines carrying low internal pressures. The nesting construction can be compressed to solid metal height or expanded to five times the compressed height.

Sizes range in 50 steps from 1 to 36 in. in inside diameter. Special sizes are available to specification in the standard male design. Nesting design is available in a standard range of 27 sizes from 0.687 to 7.375 in. in inside diameter with a standardized 1-in. convolution height for all sizes. Special designs are available in this type also. Both types can be obtained in a variety of metals to suit given applications.

If you write maker identify as IEN - 15

TRUCK . . Roller attachment takes long loads in and out of storage

Source: TOWMOTOR CORPORATION
1226 E. 152nd St., Dept. IEN, Cleveland 10, Ohio

Eliminates manual handling

Roll-Off is a new hydraulic attachment that fits over the forks of a standard Towmotor truck and connects to the truck's hydraulic circuit. A load rides on the power driven rolls which lie lengthwise on the outer side of each fork.

To store a load, the truck is brought into position and lowered until one end of the load is on rollers. Then the power rollers are rotated to move the load part way from the truck to rest on a second idler roll on a platform or storage rack.

At this point the truck forks are lowered, the truck is turned around and the load is pushed all of the way into place. Reverse action takes a load from storage. The attachment is suited to handle lumber, pipe, bar stock. Load capacity is 3 ton at 21-in. load center.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 16

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IPCO WELDING CURTAINS

A SOUND INVESTMENT FOR PROTECTION OF PERSONNEL

Workers and passers-by are protected from harmful rays given off by welding operations. Also serve as a protective shield against flying chips and scale. Made of special flameproof and waterproof canvas—or asbestos—complete with eyelets for suspending on rod or pipe support.

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"LUBRIPLATE saved us $2,098.16 in seven months"

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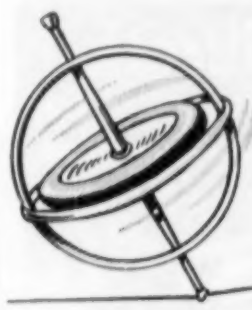

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Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers—because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

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Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both — LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

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A LITTLE DOES A LOT

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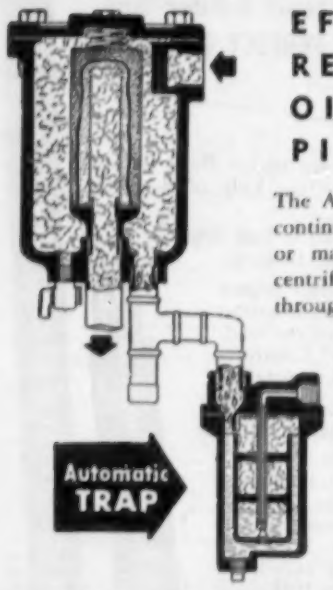
FOR COMPRESSED AIR



EFFICIENTLY
REMOVES
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The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

Write for complete data Bulletin 177

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ADAMS *Poro-Stone* AIR FILTER

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Leave it to Crane to build pipe coils that precisely meet your specifications. Although seamless carbon steel is the favorite material, Crane has the experience—and the facilities to fabricate whatever coils you need in wrought iron, copper, brass, nickel, aluminum, 18-8 of various types, and other alloys. Crane can supply all piping accessories, too, as a further assurance of dependability. Information is in your Crane Catalog and in *free* Circular 318——or check with your Crane Representative.

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Industrial Equipment News

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VOL. 22 JANUARY, 1954 No. 1

Automation

Automation is a new word. It comes up for discussion at increasingly frequent intervals. Copywriters are beginning to use it when they talk about the things their products will accomplish. Actually it is a new word that names a subject as old as the thought in the mind of the individual who, way back when, originated the first device to supplement human effort.

The subject defined by automation, as it applies to the industrial plant, has become a highly complex one, with the many wonderful and startling things that have come into existence. It has many angles, two of which seem to stand out for your particular attention in the coming year. They are closely related to each other and to your own interests.

One is your critical need to maintain balance between the components you choose, from the many available, to step up the efficiency or productivity of your operating facilities. The other is the broadening approach being taken by more and more manufacturers as they realize that their own individual products will be successful only when the required supplementary products are included to maintain balanced action at the planned increased tempo.

You have experience spreading over many subjects that make up your complete plant. That experience is limited, however, by the small number of plants with which you probably have been connected. You may miss a subject, when you make a new equipment setup, because that subject has not been a factor previously. For example—

A company installed a line of forge furnaces. It was decided to conserve floor space by locating the motor driven blowers in covered pits beside the furnace line. Someone forgot to water proof the pits or connect them to the sewer. Water accumulated until it drowned the motors. The pit installation was new to that company. The need to drain should have been evident but was overlooked. The blower manufacturer had seen many similar installations. He could have given warning but did not.

That was some years ago. Today, you can call in a dozen blower makers who are prepared to give you plans for installation of their equipment under any conditions, with complete instructions on things to look out for. There are manufacturers of major equipment of every type, and of associated facilities also, who are prepared to consult with you, not only on their own products but also on all of the things that experience has shown them to be essential in maintenance of operating balance for satisfactory automation.

Look for those manufacturers. Ask them for that type of help in making your decisions and you will save yourself many a headache. Let us help you find them. Watch IEN for the items we write, whenever we learn of a new one or report a piece of "helpful information" as it is made available. Choose those manufacturers, to do business with in 1954, who show you their willingness to talk about and advise you on subjects associated with their own. No one knows what those subjects are better than they.

W. E. Irish.

If you write maker identify as IEN - 23

750 DIFFERENT CABINET COMBINATIONS
Available for Small Parts Storage, Handling or Display. A Type and Size for Every Need.

We can supply you the perfect cabinet for your particular requirements. 750 different combinations can be CUSTOM - BUILT at production line prices. Free catalog upon request.

AKRO-MILS, INC. Box 989-N AKRON 9, OHIO

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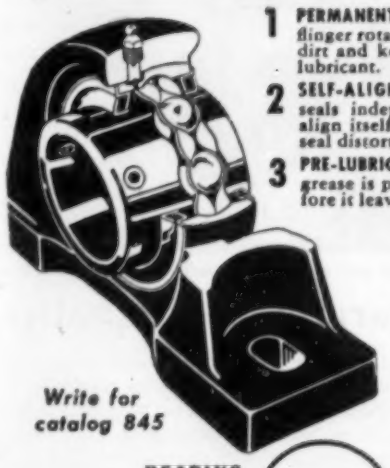
SEALMASTER BALL BEARING UNITS

3 Points of *Superiority*



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Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens. 1.49

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Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate on either 12 or 32V, DC current. Has built-in, relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. 19.50

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Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle . . 12.75

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new... LOVEJOY CIF COUPLING

CIF Coupling: 1 to 64 hp. at 100 rpm . . . maximum bore 1⅝ to 5⅞.

★COMPACT — fits right into the flywheel . . . saves space required by conventional hub length.

★ECONOMICAL—elimination of one flange affords cost saving over standard flywheel couplings

★MAINTENANCE FREE—cushions changed without shutdown . . . no lubrication required

LOVEJOY Flexible Couplings provide maximum alignment correction, extra-smooth power transmission . . . absorb vibration, sta t'ng torque and shock of intermittent loads . . . assure optimum motor and machine performance. Cush ons are made of materials best suited to load conditions.

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Manufacturers of Flexible Couplings, Universal Joints, Variable Speed Transmissions, and Variable Speed Pulleys

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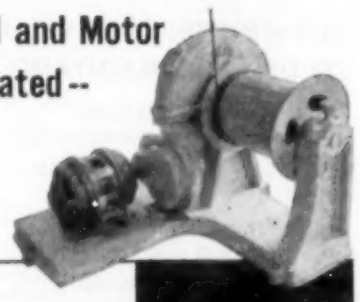
S-A Winches

Hand and Motor Operated--

Capacities 500-3000 Lbs.



Lifting and pulling can be done faster, more safely, with S-A Winches. They quickly pay for themselves in manhours saved. Available for floor or wall mounting. Reversible motors aid in hoisting. Most models can also be used as a capstan for car pulling. Unusually compact.

Gives One Man the "Muscles" to Lift-Pull Heavy Loads

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Standard Products Division
231 Ridgeway Avenue, Aurora, Ill.
Please send Bulletin 853 on S-A Hand and Motor Winches.
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Company.....
Street.....
City.....Zone...State.....

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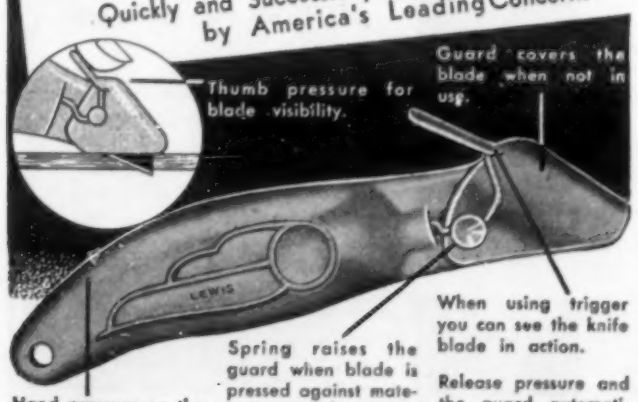
Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

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COMMUNICATING . . Radio telephone for two-way conversation in local area

Source: STEWART-WARNER CORPORATION
1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

Two-way citizens radio

Portafone trade names this new Model-73 radio telephone. It is supplied in matched pairs at a list price of $199.50, including an antenna and a carrying case. The two instruments in the pair are tuned to each other. Each employs a press-to-talk button. When this button is released the circuit is set up so the unit acts as a receiver. Power can be provided by a battery pack, listing at $6.45, or by a central station power pack designed to plug into a 110-volt ac. circuit. It lists at $34.65.

Operation is in a special 465-megacycle frequency band established by the Federal Communications Commission. A station license is required but an operator license is not necessary. The antenna is horizontal dipole collapsible plug-in design. Each individual unit is packaged in a fabric carrying case which also holds the antenna and has room for the battery. Weight of the transceiver and its antenna is 28 ounces.

If you write maker identify as IEN - 30

GAGE . . Electronic instrument measures by changes in capacitance

Source: FIELDEN INSTRUMENT DIVISION
2918-22 N. 4th St., Philadelphia 33, Pa.

Six sensitivity ranges

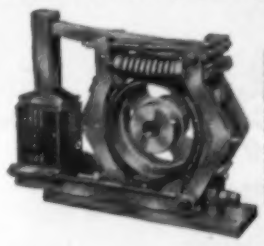
Proximity meter-capacitance gage is a new electronic instrument to measure concentricity of shafts, rotors, commutators, very small dimensions without requiring physical contact, to compare the composition or quality of conducting or nonconducting materials either solid, liquid or gaseous, to measure thickness of paint and other coatings or insulating materials bonded to metal surfaces. Variations are reflected by change in position of the test surface of the work being measured with respect to a fixed measuring electrode that connects to the instrument housing through a 4-ft. cable.

Sensitivity is within 0.05 micro-microfarad. Response, static and dynamic, is between 0 and 4,000 cycles per second. Assembly is in a housing that measures 15 by 9 by 9 inches. Operation is on 110-volt 60-cycle ac. Readings are obtained on the meter that forms a part of the assembly or can be viewed on an oscilloscope connected to the instrument.

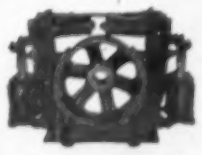
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 31

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SINGLE SOLENOID SB-373 BRAKE 10" DIA. 5" FACE 475 FT.-LBS. CONTINUOUS DUTY



DOUBLE SOLENOID SB-388 BRAKE 24" DIA. 10" FACE 2400 FT.-LBS. CONTINUOUS DUTY

SB-300 LINE OF BRAKES

Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN - 32

CHROMALOX Strip Heaters

Solve Hundreds of heating problems

EFFICIENT • DEPENDABLE • LOW COST

Electric Heat FOR PRODUCTS AND PROCESSES

Easy-to-install CHROMALOX Electric Strip Heaters give clean, dependable and accurately controlled heat. They are widely used in platens, dies, kettles, tanks, ovens, air ducts and other applications requiring accurate temperature control and around-the-clock service.

In straight lengths, curves, rings, segments; with iron, steel and alloy sheaths.

WANT MORE FACTS?

...Send for the free booklet "100 Ways to Apply Electric Heat". It has many ideas you can adapt for use in your plant.

EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.
See Chromalox Radiant Heaters Advertisement, Page 11

CHROMALOX IB-9

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 33

MARK CAN LIDS ...ACCURATELY ...ECONOMICALLY

MODEL SF-100-AE EMBOSSING FIXTURE

This Fixture code marks all sizes of can lids up to one gallon, with one or more lines of lettering—with easily-changed type. A plastic matrix serves as the female die, which can be reused and does not have to be changed as characters are changed. Investigate today!

Write for Complete Data!

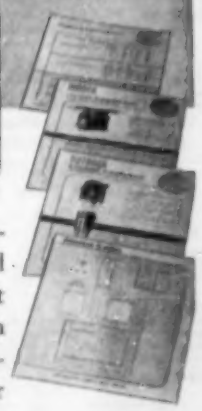
Mecco SAFETY MARKING TOOLS **M.E.CUNNINGHAM CO.**

1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 34

NEW DIMENSION SHEETS Give Complete Information

ALLIS-CHALMERS **INSTRUMENT TRANSFORMERS**



Just off the press — all the mechanical and electrical information you need in a convenient, completely bound set of data sheets. Gives most thorough presentation of entire line of Allis-Chalmers instrument transformers ever published. Get your copy from your nearest A-C district office or write:

Allis-Chalmers, Milwaukee 1, Wis.

A-4113

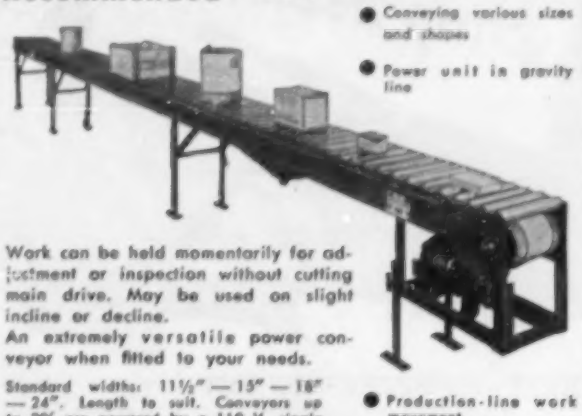
ALLIS-CHALMERS A-C

If you write maker identify as IEN - 35

METZGAR LIVE-ROLLER CONVEYOR

Specifically Recommended for

- Moving sharp-cornered and rough-edged items
- Conveying various sizes and shapes
- Power unit in gravity line



Work can be held momentarily for adjustment or inspection without cutting main drive. May be used on slight incline or decline.

An extremely versatile power conveyor when fitted to your needs.

Standard widths: 11½" — 15" — 18" — 24". Length to suit. Conveyors up to 30' are powered by a 110 V. single phase gearhead A.C. or D.C. motor; longer units, 220/440 three phase A.C. or D.C. Roller spacing as required. Factory lubricated for life.

- Production-line work movement
- Handling heated and heat-treated items

Our engineers can help you most when you explain your requirements fully. Ask for Bulletin J-1.

METZGAR CONVEYOR CO.

417 Douglas N. W. — MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 36

AMERICAN MONORAIL

Free Moving Cranes

MANUAL-ELECTRIC

American MonoRail cranes offer all the advantages of lightness, easy movement, strength, live load capacity, interlocking and safety devices for loads up to 5 tons. Cranes are available for manual or power operation controlled from cab or floor.

SEND FOR BULLETIN C-1

THE AMERICAN MONORAIL CO.

13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN - 37

OPTICAL BARGAINS

IMPORTED STEREO MICROSCOPE at 50% Saving!

Wide, 3 Dimensional Field Excellent Depth for Working Under Magnification!

$160 Val. ONLY **$85** Pstpd.

Now, for the first time—a fine, imported Binocular Microscope at a substantial saving. Used for inspection, counting, checking, etc. Fixed 3 power objective with 3 pairs of matched eye-pieces to give you powers of 15X, 30X, 45X. Rack and pinion focusing. Interpupillary adjustment. Instrument is removable from base for mounting on equipment or bench. Working distance—2¾". Adjustable to extra height. Fine hardwood case included. Recommended for lab, shop, factory or home use. We guarantee complete satisfaction or your money back.

Stock No. 70,111-AS ..... $85.00 Postpaid

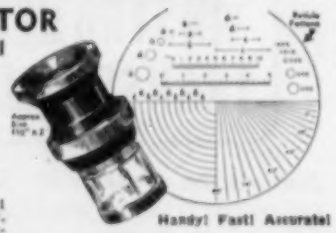
Send check or M. O. or order on open account.

POCKET COMPARATOR

Check, Measure, Inspect Small Parts and Dimensions with 6 POWER MAGNIFICATION MEASURES

• Angles • Radii • Circles • Linear

in both decimal inches and millimeters.



Handy! Fast! Accurate!

First time available at such low price! EDSCORP POCKET COMPARATOR. Fine, imported measuring magnifier—approx. size 1⅛" x 2" for fast, accurate inspection of intricate parts. Used to check layouts, machining on tools, dies, gauges—to check threads, chamfers, small holes, in optical work for checking flaws such as bubbles, seeds, scratches, pits and digs. For scientists — in determining width of spectrograph lines. In photography—measuring and focusing at ground glass. Instrument comes in protective leather case. Money-back guarantee!

Stock No. 30,061-AS $22.50 Postpaid

Send check or M. O. or order on open account.

BARGAINS GALORE! Get FREE CATALOG "AS"

If you haven't seen our big, FREE Catalog, you don't know what you're missing. Fantastic variety—never before have so many lenses, prisms, optical instruments, and components been offered from one source. Positively the greatest assembly of bargains in all America. Imported! Domestic! Telescopes! Microscopes! Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get optical items. Write for FREE CATALOG "AS."

EDMUND SCIENTIFIC CORP. • Barrington, N. J.

If you write maker identify as IEN - 38

TRUCK . . Power lift platform unit elevates 2 ton load to 120 inches

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

Motor driven

The operator walks and controls this new platform assembly, of the 2-ton Worksaver motorized truck, at the steering handle. The new unit represents further development of the power lift fork design, previously described IEN-12940-52. It is available with platform length to 60 inches. Load support, for stable operation, is provided by two heavy duty caster wheels. The truck is suited particularly to stack skids and for high level loading.

If you write maker identify as IEN - 39

ALUMINUM . . Panel construction with impregnated paper honeycomb core

Source: REYNOLDS METALS CO.
2553 S. Third St., Louisville 1, Ky.

Company expects many uses

Reynocell trade names a new panel construction made up of two outer sheets of embossed aluminum bonded with heat and pressure to a core of resin impregnated paper formed into a figure-eight honeycomb construction. The panel is available in thicknesses ranging from 1 to 4 in. and in sizes to 57 in. by 16 feet. A plywood panel weighs six times as much as the 4-in. construction of the new panel of equal rigidity when loaded as a beam.

The company suggests use of the new material in desks and table tops, doors, drafting boards, catwalks, platforms, refrigerators, cabinets, display fixtures, heat shields and baffles, loading ramps, pallets. A panel 1 in. in thickness weighs 1.01 lb. per sq. foot. The 4-in. panel weighs 1.46 pounds.

If you write maker identify as IEN - 40

PROTECTING . . Plastic lenses for welding and chipping goggles

Source: UNITED STATES SAFETY SERVICE CO.
1215 McGee, Dept. IEN, Kansas City 6, Mo.

For your goggles

Optilite A is a new plastic safety lens that presents a hard surface for resistance to scratching and for long service life. The lens is particularly suited where pitting and spatter are encountered.

Optilite B is a companion lens featuring comparatively low cost. It is recommended for operation where short lens life is expected. Both lenses are available in 6.00 curve clear, in 44-mm. or 47-mm. drop oval and 50-mm. round. Both lenses meet Federal Specifications for impact and optical qualities.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 41

CUT COSTS . . . SPEED PRODUCTION

BRADY STOCK QUIK-MASKS©

MOUNTED ON CARDS for

• PAINTING • PLATING
• TUMBLING • BUFFING

Protect machined parts, name plates, holes, threads, designs, etc., during finishing operations. Eliminate slow, costly hand cutting of masks and stencils.

Self-adhesive Brady QUIK-MASKS are pre-cut to sizes and shapes you need. They come mounted on handy dispenser cards or individual liners for speedy application. You just *peel, press, protect.* Hi-Heat resistant to 300° F. Quickly removed after baking without residue. Squares, circles and rectangles in all standard production sizes available from stock. Specials made to your exact requirements. Send for FREE samples and idea-packed literature.

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS

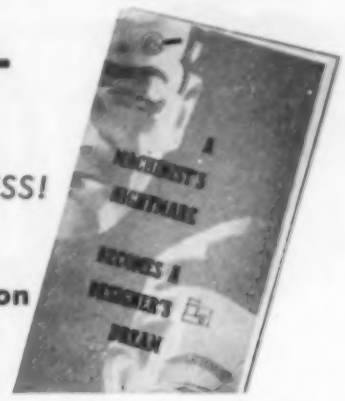
W. H. BRADY COMPANY

EST. 1914

756 WEST GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN - 42

Free--



JUST OFF THE PRESS!

Latest Information on INCO Precision Castings

Have you ever wondered whether precision casting might solve your need for a small part that is eating up profits in machining costs?

This new leaflet, "A Machinist's Nightmare Becomes a Designer's Dream," may answer your questions.

It gives specific examples of where INCO Precision Castings have cut production costs on small parts — in one case as much as 60%.

It explains how INCO's Precision Casting Foundry is equipped to handle your job. And it tells how parts that are precision cast in the higher alloys permit wider design latitudes and give longer service life.

Your copy of the new folder may point the way to a better design at lower cost. To get it, circle this number on the reply card.

THE INTERNATIONAL NICKEL COMPANY, INC. INCO
67 Wall Street — New York 5, N. Y.

If you write maker identify as IEN - 43

HERE'S WHY

PRESTO-WELD Trade-Mark

BLOWPIPES *COST SO LITTLE TO USE AND MAINTAIN*

SELF-SEATING VALVES
Reseat scored valves when turned tight.

RUGGED HANDLE ASSEMBLY
Built for long, trouble-free service.

SLIP-FIT "O" RINGS
Perfect gas seals every time.

MIXER IN EACH HEAD
Resists backfires, eliminates burnouts.

SWAGED, PURE COPPER TIPS
Heads snap in handle. No wrench needed.

The PREST-O-WELD W-122 blowpipe (illustrated) is available with 13 standard welding heads and 3 multiflame heating heads, all of the snap-in type. Ask your LINDE jobber for a demonstration or write for further information. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y.

get it from your LINDE jobber

The terms "Linde" and "Prest-O-Weld" are registered trade-marks of Union Carbide and Carbon Corporation.

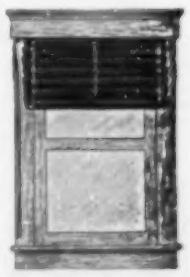
If you write maker identify as IEN - 44

Shut out ALL the light with *AMSON* BLACKOUT SHADES

Shade lowered

Reef-pleated to keep out side light and eliminate rollers

No pin-points or slivers of light come through this blackout shade! Absence of rollers lets shade hug window frame tightly. It's perfect for schools, church halls, visual training rooms, laboratories, hospitals, office buildings — easily raised and lowered.



Shade raised

10 oz. full weave Army duck
Extremely durable, yet pliable, duck that can be dry-cleaned and washed. It's run-fast and really jet-black.

Can be made flame-resistant
If desired, duck can be treated for permanent flame-resistance.

Write or phone for full details today.

A. MAMAUX & SON

120 Boulevard of Allies • Pittsburgh 22, Pa.
Phone COurt 1-3500

If you write maker identify as **IEN - 45**

SEND FOR THIS BULLETIN 400 TODAY!

ELECTRO-STAYNEW BULLETIN CONTAINS . . .

- detailed diagrams on how the Electro-Staynew cleans air.
- description of all component parts.
- cutaway view of suggested installation.
- complete mechanical and electrical specifications.
- examples of fool-proof safety features.
- report of studies that prove Electro-Staynew sets new standards for economy.
- convenient chart of sizes and material list.

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION
3 Centre Park Rochester 3, New York
ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as **IEN - 46**

Pressure Blast Application #114

Before Pressure Blasting — After Pressure Blasting

Hand Finishing of this sterling silver fork die was reduced by 85% with Pressure Blast doing the primary finishing job. Heat treat scale was removed in seconds with absolutely no evidence of etching or stock removal. Not only is finishing time minimized but the work from this die is now smoother, cleaner and requires less subsequent finishing.

MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications!

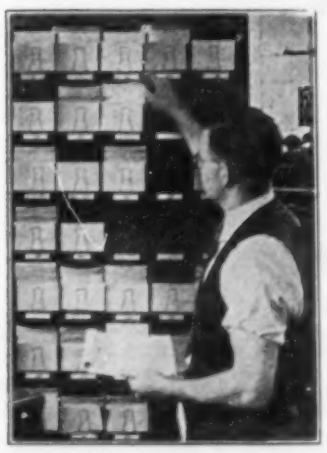
Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

The CRO-PLATE Company, Incorporated
747-3 Windsor Street
Hartford 5, Conn.

If you write maker identify as **IEN - 47**

MACHINE LOADING, SCHEDULING DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:



Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to Plan Assured.

Readily Adaptable . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc., and McCaskey Machine Control Boards.

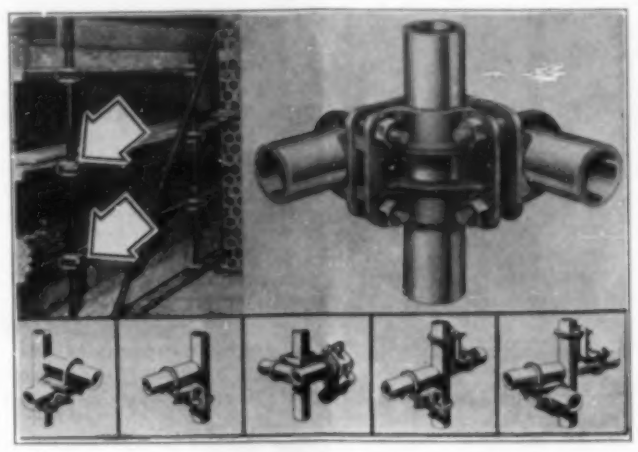
Write today for your copy of illustrated Bulletin A-630 IEN

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as **IEN - 48**

SCAFFOLD . . Clamp type fitting assembles pipe to build a structure

Source: TUBULAR STRUCTURES CORP.
2960 Marsh St., Dept. IEN, Los Angeles 39, Calif.



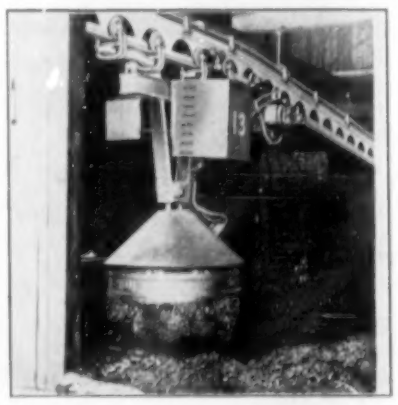
Unlimited combinations

Tube-Strut is a new clamp fitting made of two steel U-bolts and malleable iron or aluminum plates. Pipe can be assembled in desired arrangements to construct scaffolds, shelving, racks, fixtures. The fitting is available for ½, 1 and 1½-in. pipe. It has gripping strength of 2½ ton on a 1-in. pipe, combined with structural rigidity provided by the clamp design, to provide adequate bracing ability.

If you write maker identify as **IEN - 49**

CONVEYING . . Electro-magnet rides carrier on track to handle scrap

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio



Three minutes per trip

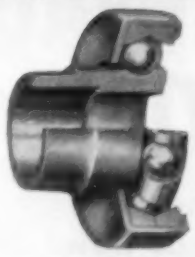
New assembly of the company's Tramrail equipment includes a 70-ft. track, a motor driven carrier, an electro-magnet with limiting and sequence controls for automatic operation. The track is mounted in a tunnel beneath a floor carrying a line of metal working machines. Turnings and chips from these machines drop through chutes in the floor into the tunnel. The carrier supporting the magnet moves back and forth through the tunnel to pick up the scrap, carry it to a bin at one end and discharge it.

The magnet circuit is open on the trip from the bin to the far end of the tunnel. It is closed at this point so the magnet is energized for the return trip. Its circuit is again opened when the carrier reaches the limit end of the track above the bin. The magnet is a 36-in. unit. The track rides up a 13 per cent grade between the tunnel and the bin. The automatic operation does not require any attention.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as **IEN - 50**

Important low-friction bearing development for conveyor rolls



Logan X-SERIES

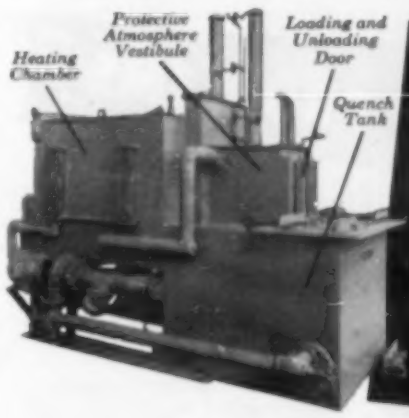
Available at about the same price as ordinary conveyor roll bearings. Note: 33% less grade required on gravity lines. Get the details: just mail the coupon below in your business envelope. No obligation.

LOGAN CONVEYORS • LOGAN CO., 276 Cabel St., Louisville, Ky.

Write for literature today!
USE THE COUPON

LOGAN CO., 276 Cabel St., Louisville, Ky.
Send literature on the new LOGAN X-Series Bearings.
Mr. _____
Firm _____
Address _____
(There is no obligation)

If you write maker identify as **IEN - 51**



A NEW HOMOCARB FURNACE WITH *protected quench*

Now, for the first time work can be direct-quenched from a Homocarb furnace under a protective atmosphere. All the well known benefits of the Homocarb method are provided. In addition, work moves directly from furnace to quench without exposure to air.

The complete equipment consists of:

- The new horizontal Homocarb furnace with protected quench
- Microcarb atmosphere control
- D.A.T. three-function temperature control

For complete information just write us at 4905 Stenton Avenue, Phila. 44, Penna.

Jrl. Ad T-620(43b)

LEEDS & NORTHRUP
instruments · automatic controls · furnaces

If you write maker identify as **IEN - 52**

SAVE 2 WAYS on Chain Drives and Conveyors

This Book Shows You How

With Baldwin-Rex Double Pitch Roller Chain, you save both cost and weight without sacrificing the high quality of standard roller chain. Where speeds are slow to medium, loads are moderate and centers are long, Double-Pitch is often the economical choice.

For all the details on how this precision chain can save you important money and weight, just use the coupon to send for our free Double-Pitch Bulletin.

BALDWIN-REX ROLLER CHAINS

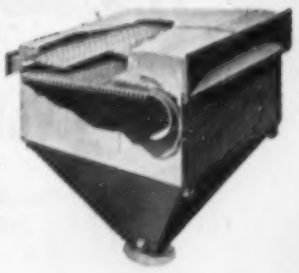
Chain Belt Company 53-409
358 Plainfield Street, Springfield 2, Mass.

Please send me Bulletin 51-2.

Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

If you write maker identify as **IEN - 53**

Buell-designed 'LR' Collector Stops Fly Ash From Small Boilers!



High efficiency from 100 to 2000 BHP. Traps 99% of all 100-mesh and larger cinder discharge. Is effective on natural draft boilers!

For complete details write for latest 'LR' Bulletin. Buell Engineering Company, Dept. 22-A, 70 Pine Street, New York 5, New York.

buell
Engineered Efficiency in
FLY ASH COLLECTION

If you write maker identify as IEN - 54

CASTER PROBLEMS?

See

THOMAS TRUCK
of Keokuk

Their complete line of casters has been designed and built to give long years of dependable operation under today's faster rates of travel and longer hauling distances. Whether you need casters with steel, rubber-tired, pneumatic or semi-pneumatic wheels with Hyatt roller bearings, in rigid, swivel, cone stem or trailer casters, see THOMAS. Their years of experience and manufacturing facilities are ready to serve you. *Whatever* your caster problem—see THOMAS, *first!*

Send for Free Literature

THOMAS TRUCK AND CASTER COMPANY
442 Mississippi River
KEOKUK, IOWA

If you write maker identify as IEN - 55

PICK 'EM UP Faster..Easier

DOWNS SAFETY GRABS ...GRIP ANYTHING!

Yes we said anything—odd shapes, round, oblong, square or even loose objects such as bags or bundles. Best of all you save money on your handling problems while protecting employees.

Downs Safety Grabs are engineered to provide a load safety factor greater than rated capacity plus a Bulldog grip that won't let go until you release the load. There's a Downs hook, grip, tong or sling to fit every handling problem. Write for free illustrated catalog 200 today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
840 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN - 56

IT'S SUPERSAFE!

THE *New* IDEAL Voltage Tester

Every feature thousands of electrical men said they wanted including:

New... Handier center prod mount
Prod storage shields tips
Double strength seamless plastic case--no surface metal

PLUS **"DOUBLE PROTECTION"** . . . a solenoid, calibrated indicator, AND a neon test lamp, each independent of the other. YOU CAN'T FAIL TO DETECT VOLTAGE! . . . Also many other time-proven IDEAL advantages.

Tests 110 to 550 volts AC—110 to 600 volts DC

SOLD THROUGH LEADING DISTRIBUTORS. SEE IT NOW

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send me full catalog information on new IDEAL Voltage Tester.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 57

PUMP . . Self-priming centrifugal rates to 120 gpm. on 20 ft. total head

Source: MARLOW PUMPS
Box 566, Dept. IEN, Ridgewood, N. J.

23 models

New sizes, with 1½ and 2 in. inlet and outlet, have been added to the company's line of vertical motor driven self-priming pumps. The line employs a ⅓ to 1½-hp. motor for single or three-phase operation in open or explosion proof construction. The design includes a self-lubricating shaft seal to minimize need for maintenance. Priming tank capacity is 1 gallon. The impeller can be specified in either open or closed design.

If you write maker identify as IEN - 58

CLEANING . . Detergent powders, soluble in water, for use on metals

Source: PHILADELPHIA QUARTZ CO.
Public Ledger Bldg., Dept. IEN, Philadelphia 6, Pa.

Technical data upon request

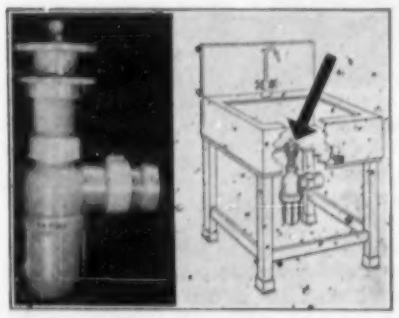
Metso Anhydrous is a new strongly alkaline detergent for heavy duty cleaning in the metal industries, for use in laundries as a soap builder as well as to formulate specialized detergent compounds.

Metso 200 is designed for cleaning operations that require strong alkaline activity as in application on ferrous metals prior to electroplating or enameling and for soaker tank cleaning. This material, in solution with water, will remove oil, grease, paint, drawing and lubricating compounds. The solution is a good conductor of electricity.

If you write maker identify as IEN - 59

TRAP . . Polyethylene drain, chemically inert, for laboratory sink

Source: ARTHUR S. LAPINE & CO.
6001 S. Knox Ave., Dept. IEN, Chicago 29, Ill.



$33.75 ready to install

Lanco Sink Unit is a new unit assembly of stopper, high level drain, strainer, lock-nut, plug, trap and union outlet for application beneath a laboratory sink. The trap can be unscrewed by hand, emptied, rinsed and replaced quickly. The polyethylene plastic is resistant to attack by mineral acids, alkalis, hydrofluoric acid, fluorine compounds, mercury. It is germ proof, frost proof, non-adherent, unbreakable.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 60

BUILD YOUR OWN OVERHEAD CONVEYOR!

This detailed, illustrated FREE 28-page book tells how!

You, too, can build your own light-duty, power-driven, overhead monorail conveyor with Junior Monoveyor. This 28-page booklet (Bulletin JM2) tells you in detail how to make your layout, select the parts you will need, and install them. All elements are fully illustrated, all sizes and capacities given.

WRITE FOR YOUR COPY TODAY!

MECHANICAL HANDLING SYSTEMS INC.
4605 Nancy Ave., Detroit 12, Michigan
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems Ltd., Toronto

If you write maker identify as IEN - 61

THE FIRST NAME

WITH THE VERY BEST FACILITIES

DAYTON ROGERS
Manufacturing Company

MINNEAPOLIS 7, MINN.

REPRESENTED NATIONALLY IN PRINCIPAL CITIES

If you write maker identify as IEN - 62

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAVE **The WORKER and you SAVE PRODUCTION**

Stonehouse Signs are made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"...the only authentic standards.

Hundreds of different stock-worded signs for prompt shipment • Special worded Accident Prevention signs also produced to your specifications.

Our complete Catalog No. 9, 64 pages, full color, free on request.

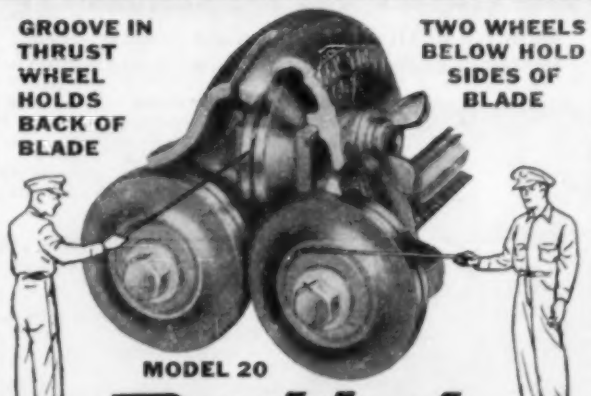
Stonehouse
SIGNS, inc. MANUFACTURERS
Stonehouse Building · 842 Lerimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

Sturdy, Strong, Band-Saw Guide

GROOVE IN THRUST WHEEL HOLDS BACK OF BLADE

TWO WHEELS BELOW HOLD SIDES OF BLADE



MODEL 20

Paddock
BALL-BEARING BAND SAW GUIDES

Do you want faster, smoother, safer Band-Saw operation? Install PADDOCK BALL-BEARING BAND-SAW GUIDES. Model 20 fits all machines having 2½" back of blade. Interchangeable ball-bearing wheels run with blade to give friction free blade support. Cut-away section in photo shows groved wheel that supports back of blade. Two side wheels support sides of blade. Designed for ⅛" to 1¼" wide blades. Models for large or small machines. Write for details, give size, and make of machines.

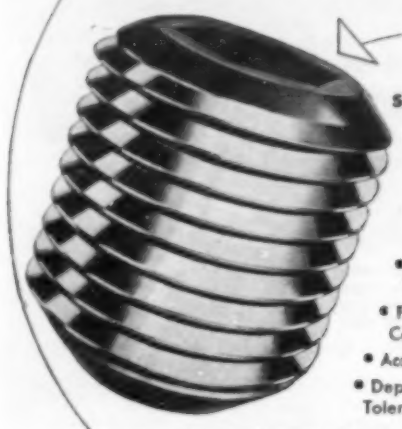
SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street • Kansas City, Missouri

If you write maker identify as IEN - 64

P-K

GROUND THREAD Socket Set Screws



set new standards for

- Super-Smooth Finish
- Uniform Hardness and Toughness
- Clean Starting Threads
- Faultless Thread Contour
- Accurate Hex Dimensions
- Dependable Class 3 Tolerance

Samples free. Ask your P-K Distributor or write: Parker-Kalon Division, General American Transportation Corporation 200 Varick St., New York 14.

Compare . . . you'll agree IF IT'S P-K . . . IT'S O.K.

PARKER-KALON®
SOCKET SCREWS

If you write maker identify as IEN - 65

Announcing . . . ooo

a New addition to our popular line of SELECTIVE FEEDING DEVICES

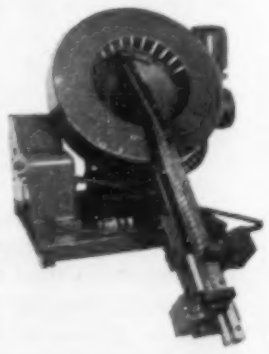
NOW! A FEEDING UNIT FOR ALMOST ANY SPECIFIC APPLICATION!

Also EXTENDED ENGINEERING SERVICE— ENABLING US TO DO THE COMPLETE TOOLING FOR YOUR INDIVIDUAL FEEDING OPERATIONS

New!

DPS BOWL-FEEDER

A proved method based on the VIBRATORY PRINCIPLE. Provides fully automatic, oriented, single line feeding to Grinding, Packaging, Inspecting and many other automatic machines and operations. Will scientifically feed light, fragile parts that normally could not withstand tumbling.



DPS BARREL-FEEDER

For years our popular unit, successfully used in thousands of plants to help speed production and reduce costs. They were designed with the idea of simplicity in operation and maximum feeding, handling a wide variety of parts. Designed for constant operation.

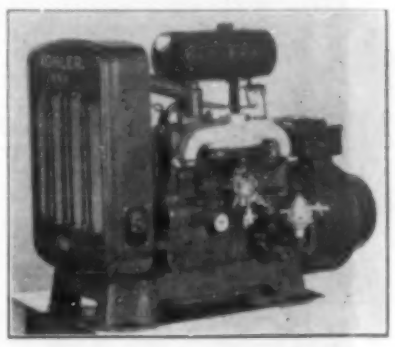
Write Us—GIVE DETAILS AND LEARN HOW OUR TRAINED ENGINEERS CAN SUPPLY THE ANSWER TO YOUR FEEDING REQUIREMENTS

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICHIGAN

If you write maker identify as IEN - 67

GENERATOR . . Engine drive, ac. and dc. starts on gasoline, runs on kerosene

Source: KOHLER COMPANY
1230 High St., Kohler, Wis.



For power and light

New design, employing a low compression cylinder head, special intake and exhaust manifold, modified cylinder block and carburetor, is now available on the company's engine driven 2 and 3.5-kw. utility generators. The liquid cooled engine mounts a 1¼-gal. gasoline tank for starting. A valve is turned to switch to kerosene when the engine has warmed up and is operating at normal speed. This valve is turned again to return the engine to gasoline, prior to a shutdown, so any remaining kerosene will be cleared from the carburetor and fuel lines.

The generator is a rotating armature design with a built-in exciter and automatic voltage regulation. It is available for 110-volt or 110/220-volt single-phase ac. or 110-volt dc. with rating at 2 kw. DC operation is not available on the 3.5-kw. assembly. Overall dimensions of the 2-kw. machine are about 37 by 17 by 28 inches. Governed speed of the 12½-hp. engine is 1,800 rpm. in standard arrangement.

If you write maker identify as IEN - 68

TUBE . . Clear flexible plastic, inert, tasteless, odorless, non-toxic

Source: AMERICAN HARD RUBBER CO.
93 Worth St., Dept. IEN, New York 13, N. Y.

Colors to order

Inside diameter ranges from 0.120 to 1 in. in the company's new Ace-Flex flexible plastic tube. It is suited for use in temporary and permanent fluid lines, in laboratories, in production and handling operations for food products, distilled products. It applies as electrical insulation, as tube for coolant lines, lubricating lines, refrigerator drains, insect and paint sprayers, air lines, atomizing equipment.

The tube is smooth, has a shiny non-tacky finish. It is light in weight, abrasion resistant and remains transparent. Its rubbery elastic quality permits connection to glass, metal or plastic fittings after dipping in soapy water. Then it will slip into place. Couplings can be made by cutting the tube into short pieces, choosing a size with inside diameter the same as the outside diameter of the tube to be joined. Ketone cement is employed for permanent connections and hose clamps for temporary ones.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 69

FREE CATALOG
Brings You GREATEST SELECTION of
Self-Locking
SET SCREWS

"ZIP-GRIP"*

"NU-CUP"*

"OFF-SET"

Whatever your application may be, if vibration or close-precision-setting are factors, you are most likely to find the right Self-Locking Set Screw in this most complete range on the market. Write us a brief description of your problem or send blueprint and we will be glad to supply you with free test samples of Zip-Grip*, Nu-Cup* or Off-Set, Set Screws, whichever we believe will best suit your particular needs.

*Pat. Pending

Set Screw & Mfg. Co.

FOR FREE CATALOG

Simply write your name and address on margin of this page, tear out and mail today.

5 Main St., Bartlett, Ill. (Chicago Suburb)

We Specialize in Solving Puzzling Set Screw Problems

If you write maker identify as IEN - 70

- CUT POWER COST
- STOP UNNECESSARY SHUTDOWNS
- REDUCE MAINTENANCE
- SAVE FUSES & CLIPS

with this TRICO combination

TRICO "Powder-Packed" **RENEWABLE FUSES**

TRICO KLIPLOK CLAMPS
FOR FUSE CLIPS
"Lock Like a Vise" and "stay put". There's no chance for faulty contact between fuses and clips.

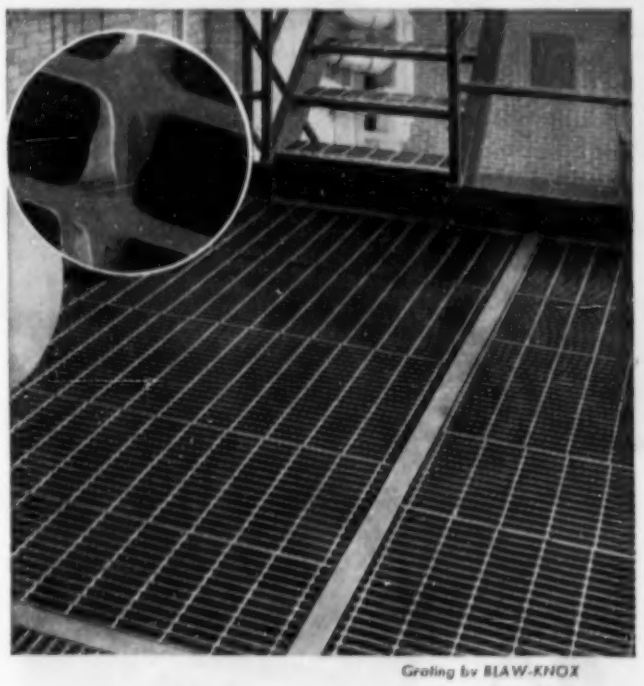
They Reduce:
- Premature Fuse Blowing
- Unnecessary Repairs
- Fire & Accident Hazards
- Burnt Fuses and Clips

The ONLY fuses with "Custom-Built" . . "Powder-Packed" renewal elements that provide:
- Tamper-proof Protection
- Positive, Safe, Time-lag
- Low-resistance Contacts
- Link Protection and Support
- Life-time Outer Parts

SEND FOR BULLETINS NO. 1 AND 6

TRICO FUSE MFG. CO. Milwaukee, Wis.

If you write maker identify as IEN - 71



Grating by BLAW-KNOX

where can you use **steel grating?**

You undoubtedly use a lot of steel grating in your plant—floors, platforms, walkways, catwalks and stair treads, for example.

But how about grating for fan guards and shelving—for covering open pits and light wells? And how about other uses throughout your plant that no one has thought of—as steel grating is adaptable to many uses.

If you have any problem about a common application or an unusual application or a possible application, we'll be glad to hear from you. And to give you a prompt answer.

Only BLAW-KNOX Electroforged® Steel Grating and Stair Treads —have these five exclusive features:

1. rigid one-piece construction —easy to install
2. all surfaces accessible —easy to paint
3. no sharp corners to clog —self-cleaning
4. maximum open area —for light and ventilation
5. non-slip twisted crossbar —safe footing

A short note will bring you a copy of new Bulletin No. 2365-R—a dimensional sketch will bring you a quotation.

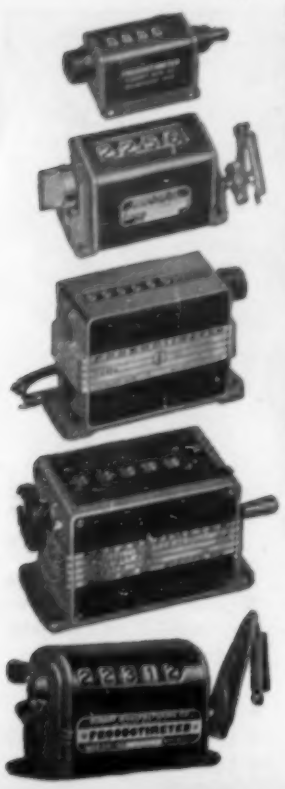
BLAW-KNOX

BLAW-KNOX COMPANY
2050 Farmers Bank Building
Pittsburgh 22, Pennsylvania

BLAW-KNOX EQUIPMENT DIVISION
GRATING DEPARTMENT

GRATING APPLICATIONS: floors • platforms • walkways • catwalks • stair treads • fan guards • shelving • and many other uses, both outdoors and indoors, for versatile steel grating.

If you write maker identify as IEN - 73



COUNTING the pulse of INDUSTRY

Productimeters register accurate count of every unit processed . . . eliminate profit-eating losses . . . insure economical plant operation and maximum use of man-hours. There's a size and style to suit every need.

Send for Catalog No. 101

DURANT MANUFACTURING CO.
1930 N. Buffum Street
Milwaukee 1, Wis.
130 S Water St.
Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS 75th ANNIVERSARY
Count Everything

If you write maker identify as IEN - 74

Johnson Self Supporting Joints

- Now Smaller Size
- Lighter Weight
- Lower Cost
- Longer Life

WRITE FOR NEW CATALOG

THE JOHNSON CORP., 846 Wood St., THREE RIVERS, MICH.

If you write maker identify as IEN - 75

SAVES $1125 A YEAR . . . with 4 BIN-DICATOR BIN-LEVEL INDICATORS

Three-stage conveyors filling silos from under-car hoppers had no automatic feed control. If either of last two conveyors stopped, preceding one jammed; had to be opened, cleared by hand. Workman suggested Bin-Dicators which stop feed automatically; now save $1125 yearly in labor and material alone for this leading chemical manufacturer.

BIN-DICATOR, "The Eyes of the Bin" automatically reports levels of materials in bins, chutes, hoppers, etc., controls conveyors and filling systems.

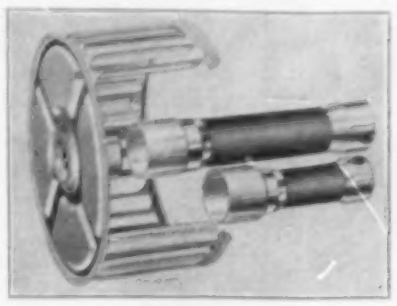
THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

NEW CATALOG FREE

If you write maker identify as IEN - 76

DRIVE . . Flexible coupling with nylon body and metal end fittings

Source: GUARDIAN PRODUCTS CORP.
1215 E. 2nd St., Dept. IEN, Michigan City, Ind.



Specified length

One end of this new flexible coupling mounts a splined metal cup. The other end carries a metal fitting equipped with a set screw. The body is made of molded nylon with wire braid reinforcement. Bores are ½ and ⅝-in. maximum. Drive capacity is ⅛ and ⅛-hp. at 1,750 rpm. The body material of the new unit is resistant to attack by oil.

The coupling is able to absorb lateral thrust or pulse in the drive operation. The splined end permits driving engagement with adjustable assembly position between the driving and the driven units.

If you write maker identify as IEN - 77

RELAY . . Hermetically sealed, miniature design, has rotary armature

Source: S. H. COUCH COMPANY
Dept. IEN, North Quincy 71, Mass.

The CVE line

Rugged-Rotary designates a new line of miniature and subminiature hermetically sealed dry nitrogen filled relays. The rotary armature design, for balanced operation, is capable of withstanding shock to 125 G and vibration to 2,000 cycles at 20 G. Coil resistances are available for 6 to 30,000 ohms with operating current down to 2 mils.

Dimensions are about 1⅝ and 2 in. in height by 1⅛ in. in diameter. Temperature range, for satisfactory operation, is minus 65 to plus 200 deg. F. The structure is silver brazed. The contacts rate 3 amp. on 28-volt dc. or 115-volt 400-cycle ac.

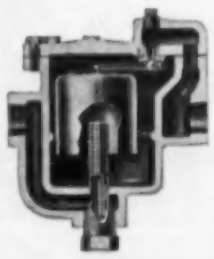
If you write maker identify as IEN - 78

Star wheels, made of hardened steel, are mounted on a spindle for application in a portable tool chuck. The wheels apply in roughing or buffing the surface of belting prior to the use of repair coatings. They prepare belt splice surfaces, remove embedded corrosion from iron and steel surfaces. Magic Buffer is the trade name. Manufacturer is Magic Chemical Co., 121 Crescent St., Dept. 129, Brockton 2, Mass.

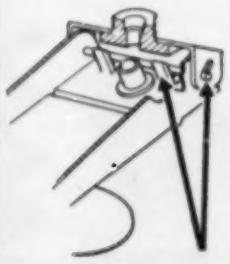
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 79

NEW TRAP



Sarco *Camlift* Bucket Trap



Cams lever valve off seat; slot and pin provide maximum valve opening

handles more volume in less time!

Sarco uses the principle of the fulcrum and lever in this newly designed trap and gives you greater discharge at no increase in trap size. Result: more for your steam trap dollar.

It's all made possible by the Sarco *Camlift* valve mechanism which provides the force needed to open the large valve without a corresponding increase in trap size.

See for yourself how this small inverted bucket trap gives you maximum capacity.

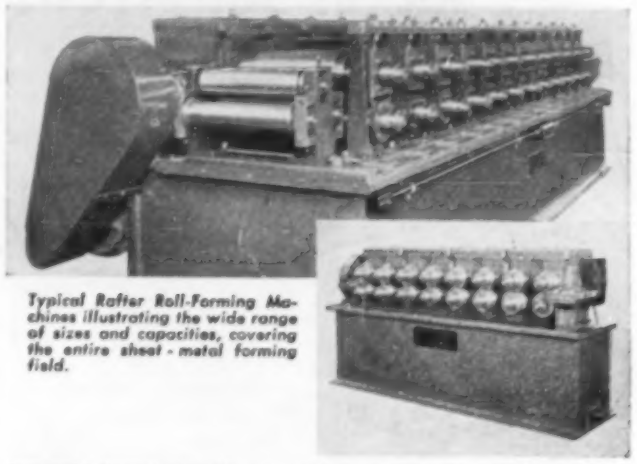
Write for free trial trap giving pipe size, capacity, and pressure conditions.

SARCO COMPANY, INC.
EMPIRE STATE BUILDING, N. Y. 1, N. Y.

If you write maker identify as IEN - 80

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet - metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls . . . Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type . . . Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square bearing or small complicated gears . . . Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings . . . Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as IEN - 81

If you write maker identify as IEN - 82

YOU SAVE $$$ WITH

EMBOSSED LABELS

NO DIE CHARGE

FOR PRODUCT IDENTIFICATION

ANY SIZE LABEL
ANY SIZE LETTERS
ANY METAL — INCLUDING STAINLESS STEEL

Raised - letter nameplates to your specifications. Less expensive than comparable etched labels.

Tack-weld, rivet or screw them to your product. Paint or galvanize over them. Wording will remain sharp and clear. Also etched and lithographed labels.

Send Sample or Sketch for Price Quotation.

DEPT. B

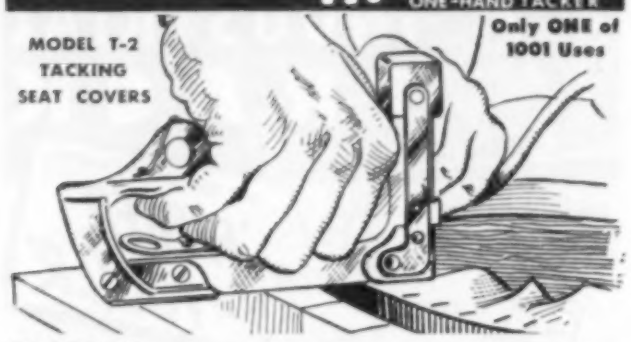
TECH PRODUCTS, INC.
442 Mosel Avenue Staten Island 4, N. Y.

If you write maker identify as **IEN - 83**

YOU CAN DO IT AT LESS COST with HANSEN ONE-HAND TACKER

MODEL T-2 TACKING SEAT COVERS

Only ONE of 1001 Uses



FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! (MODEL T-3-4 HANSEN TACKER)

Hansen saves *time, steps,* and *materials* — operates faster — saves back-tracking — ready for instant, continual use.

36 DIFFERENT MODELS

80 STAPLE SIZES

Request Booklet ...today

A.L. HANSEN MFG. CO.

5051 RAVENSWOOD AVENUE • CHICAGO 40, ILL.

If you write maker identify as **IEN - 84**

Uniform heat at the turn of a dial is yours with Chromalox Electric Radiant Heaters. Fingertip control assures exact operating temperatures for varying needs. Different zones of heat can be had within the same oven by setting up individual controls for each bank of heaters. Chromalox Units operate in low and high ambient temperatures; provide glareless radiation in infrared wave lengths absorbed efficiently by all colors, textures, surfaces. All-metal construction withstands shock, vibration, moisture; eliminates contamination; is safe with volatiles.

TYPICAL TIME and MONEY SAVING USES

- Drying
- Dehydrating
- Baking
- Pre-Heating
- Heating
- Degreasing

and many other applications

For More Know-How Send for Application Reports on Chromalox Radiant Heaters

EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.

See *Chromalox Strip Heaters Advertisement, Page 5*

CHROMALOX IB-10

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as **IEN - 85**

YOU can save money with

The Wallace **VAPOR DEGREASER**

- Electric
- Automatic
- Portable
- Production Size
- Insulated
- Galvanized

Only $257.50!

For quick, inexpensive cleaning of oils, grease, etc., from screw machine parts, die-castings, stampings; parts to be painted, plated, preserved or repaired.

No plumbing required—the portability of the Wallace DG-1 Degreaser makes it popular with large plants for "on the spot" cleaning jobs. Its low price brings it within the budget of the smallest shop.

For free bulletins and prices, write *today.*

J. D. WALLACE & COMPANY

146 S. California Ave. Chicago 12, Ill.

If you write maker identify as **IEN - 86**

SIGNALING . . Television equipment reproduces observed remote conditions

Source: DAGE ELECTRONICS CORP.
69 N. 2nd St., Dept. IEN, Beech Grove, Ind.

Sound can be added

Overall dimensions of this new Model 50-A closed circuit television camera are 9 by 4¼ by 6⅛ inches. Weight is 7¾ pounds. The new small unit has been added to the company's previously developed Model 100-B. It employs a standard 16-mm. lens and pick-up tube for operation in normal room light. The camera connects by coaxial cable to a standard television receiver. The two can be separated any distance to 1,000 feet.

Applications are in connection with industrial operations and laboratory work too remote, inaccessible or hazardous to be viewed directly by workers on the scene. The camera can be set up permanently or portably at the point of use. It can be specified with remote pan and tilt or remote turret control. A weatherproof housing is available for outdoor installation. Remote iris, focus control, on-off target and beam also can be specified. List price, for the camera and pickup tube, is $845. The tube alone lists at $345.

If you write maker identify as **IEN - 87**

MOTOR . . Miniature 400 cycle ac., for power, servo, timing applications

Source: GLOBE INDUSTRIES INC.
1784 Stanley Ave., Dept. IEN, Dayton 4, Ohio

For reversing duty

New motor, a miniature hysteresis-synchronous unit, measures 1¼ in. in diameter by 2¼ in. in length. It is available in 2 and 4-pole winding for 24,000 or 12,000 rpm. It can be wound two phase for servo applications or to operate as a single-phase capacitor unit for timing and power uses.

The rotor is mounted on double shielded, grease packed ball bearings. The stator windings employ teflon insulated magnet wire. The leads are teflon wrapped. The design employs the same mounting holes as on the company's miniature PM motors so the standard reducers can be supplied for a range of output speeds and torque.

If you write maker identify as **IEN - 88**

Magnesium alloy rod forms a short integral part of a new crankcase drain plug designed to replace the regular plug in a gasoline engine. The magnesium stands in contact with the oil in the crankcase and is attacked by any acids in the oil in preference to other metal parts of the engine. The plug is made by Johns Mfg. Co., Dept. IEN, Dunellen, N. J., in sizes to fit most makes and models of automobiles, buses and trucks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 89**

PRATER ROTARY AIRLOCK FEEDER

FEEDS powdered and granular products into conveying line — quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diamaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as **IEN - 90**

Speeds CHAMFERING, POINTING, FACING, REAMING OPERATIONS

At Vose Products Co., Pines Air-Operated End-Finishing Machines speed production on screw driver bit chamfering operations from 800 to 1000 pieces per hour over old abrasive belt methods.

EXCLUSIVE FEATURES

OF PINES END-FINISHER SAVES TIME ON TUBE, PIPE, BAR JOBS

Pines Portable End-Finisher is especially designed for fast, accurate work. Small and compact, its exclusive operating features save time. Forward travel of operating lever clamps and feeds work to rotating cutters in one pass. Operator always has one hand free for stock handling. Equipped with quick, interchangeable tool holders, chuck inserts, 8-speed sheave (760 to 3920 rpm), sturdy spindle, grease-sealed precision bearings. Unit illustrated handles stock diameters up to 2". Maximum feed stroke is 1¼". Automatic air-operated units for higher production work and larger sizes up to 5" capacity are also available.

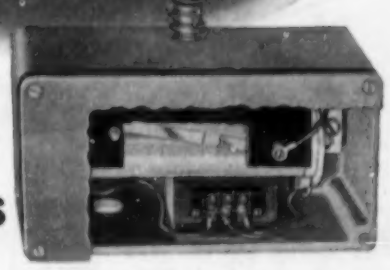
Write for Free Bulletin

▲Write today for more facts. Learn how these machines are built to save time on a wide range of work.

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery
630 WALNUT • AURORA, ILLINOIS

If you write maker identify as **IEN - 91**

New POTENTIOMETER provides control for machine tools



This compact lightweight potentiometer provides accurate electronic control for cutting tool, winder, processing machine drives, and similar applications.

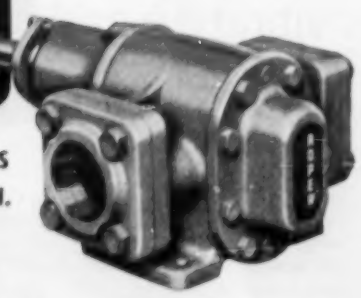
The precision metal alloy contact fully traverses the special resistance element with ½" plunger movement. Oil-tight enclosure, permanent calibration, 10,000 ohms resistance value on standard, up to 25,000 ohms on custom-made potentiometers. Write for Bulletin 68, Ward Leonard Electric Company, 33 South St., Mount Vernon, N. Y.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RELAYS • MOTOR CONTROLS • CHROMASTER

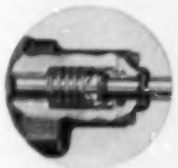
If you write maker identify as **IEN - 92**

ROPER SERIES K

FOR HYDRAULICS
PRESSURE LUBRICATION
FUEL TRANSFER



¾ to 50 G.P.M. SIZES
Pressures to 150 P.S.I.



Mechanical Seal
Ideal where repacking is not convenient. Uses any drive; no pedestal bearing needed.

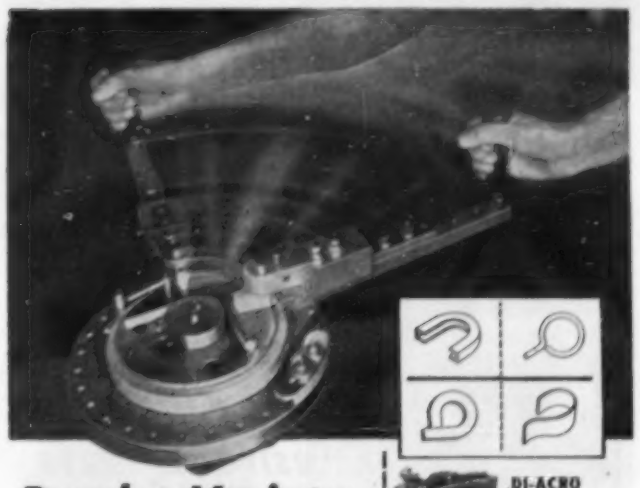
Extremely compact in all sizes . . . handle total suction lifts up to 25 feet . . . operate quietly and with equal efficiency in either direction. Sizes 10 through 50 feature Roper Venturi Suction and Discharge Principle. Packed box or mechanical seal models available . . . also furnished with or without relief valve.

Send for Catalog

GEO. D. ROPER CORP.
201 Blackhawk Park Ave.
Rockford, Illinois

ROPER *Rotary Pumps*

If you write maker identify as IEN - 93



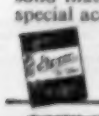
Bend a Variety of Materials

Accurately, Easily, Quickly with a versatile DI-ACRO* BENDER

Simple and complex bends can be made in ductile materials. Capacity of five hand models is from 1/16" wire to 1" round mild steel bar. Tooling is available for most forming requirements in solid materials and tubing, also many special accessories.

DI-ACRO HYDRA-POWER BENDER

A universal hydraulically operated bending machine that is equally as flexible as hand operated machine. Di-Acro Hydra-Power Benders are especially designed for those long runs and heavy bending operations which are impractical for manually operated equipment.



WANT MORE INFORMATION?
Send for New 32-Page Catalog
**Pronounced Die-ack-ro*

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue • Lake City, Minn.

If you write maker identify as IEN - 94

2651 McCausland • East St. Louis, Illinois

If you write maker identify as IEN - 95

See the NEW **UNISORB®** vibration and noise control exhibit

BOOTH 509 Plant Maintenance Show Chicago Jan. 25-28 1954

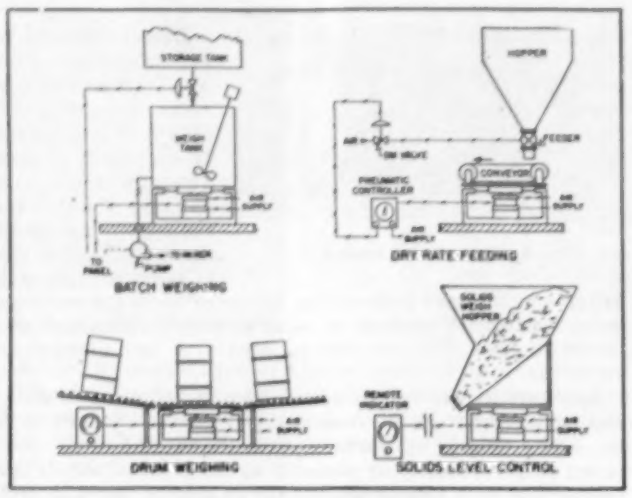
UNISORB is the modern mounting method for all types and sizes of machines in metalworking plants, textile mills, printing plants, etc.

the **FELTERS** company
208 South Street, Boston 11, Mass.

If you write maker identify as IEN - 96

WEIGHING . . Pneumatic scale reads weight or force at pressure gage

Source: WEIGHING COMPONENTS INC.
64 Fulmer Road, Dept. IEN, Hatboro, Pa.



Four typical applications

Batch weighing, dry rate feeding, drum weighing, solids level control are four typical applications that have been made by the company of the pneumatic weighing scale, previously described IEN-12143-51. The company is prepared to supply the equipment, with additional apparatus as required, for recording and control requirements. Operation calls for a clean air supply at 50 lb. or more. Consumption is 30 cfh.

Maximum net weight capacities range from 75 to 3,000 pounds. Gross weight, net plus tare, can be approximately twice the net weight. Overall dimensions of the scale assembly, not including the mounting and additional equipment, is 36 to 40 in. in width and depth by 24 to 29 in. in height.

The housing encloses two diaphragms, one above the other. The top diaphragm closes off the tare chamber and is supplied with air pressure to continuously balance a known tare load. The net weight diaphragm is mounted in a chamber below the tare unit so both diaphragms support the weight platform.

Air pressure increases in the net weight chamber from the regulated supply when weight or force is applied to the platform and a bleed nozzle closes. When the pressure has reached a point that permits the nozzle to reopen, air will exhaust at the balance point. This pressure is employed to actuate the gage that is calibrated in terms of weight.

If you write maker identify as IEN - 97

CLEANING . . Disposable tissues for lenses, tools, polished surfaces

Source: KIMBERLY-CLARK CORPORATION
Kimberly St., Dept. IEN, Neenah, Wis.

Free sample upon request

Lint free texture characterizes the new Kimwipe Tissue, previously described IEN-6370-48. Disposable Wipes designates the improved material which is available, as before, in 15 by 18-in. and 5 by 9-in. sizes. Both are supplied in dispenser packages that can be hung on a wall near a working area. A new Wipe is presented when one is withdrawn. The material is treated to retain its strength when wet. Its soft creped surface picks up dirt, absorbs fluids, will not scratch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 98

Bulletin 800 Push Buttons

- Standard, heavy duty, or oiltight enclosures
- Hundreds of types and combinations

Double-break, silver-alloy contacts in these rugged push button stations insure long service without failure. An almost endless variety of combinations makes them adaptable to every need. Special buttons, pilot lights, selector switches, etc., available in the same housings to meet your specific needs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 99

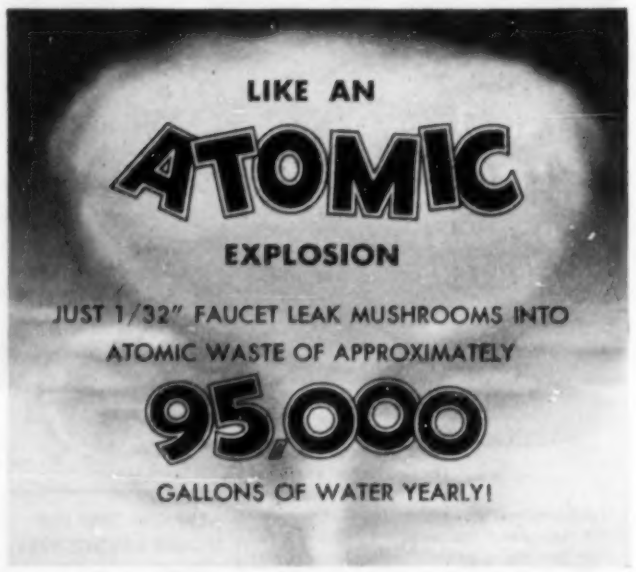
Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-1.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 100



Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.08 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1!
. . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service
There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

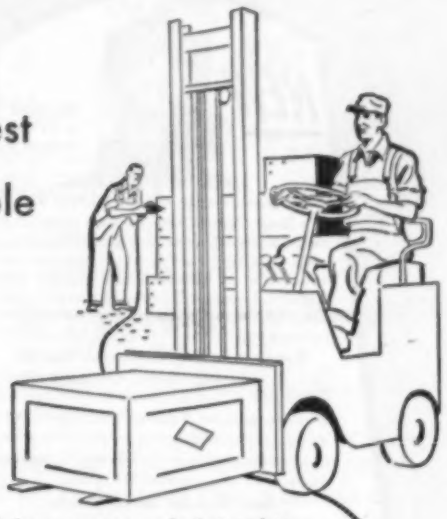
J. A. SEXAUER MFG. CO., INC., Dept. K-14
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 102

SECURITYFLEX

the toughest portable cord



Securityflex's heavy neoprene jacket resists water, oil, crushing and abrasion. As a result —Securityflex* lasts longer, increases the use of fine tools and saves you money by requiring fewer replacements.

Anaconda Wire & Cable Company,
25 Broadway, New York 4, New York.

the right cable for the job **ANACONDA®** WIRE AND CABLE

*Trademark

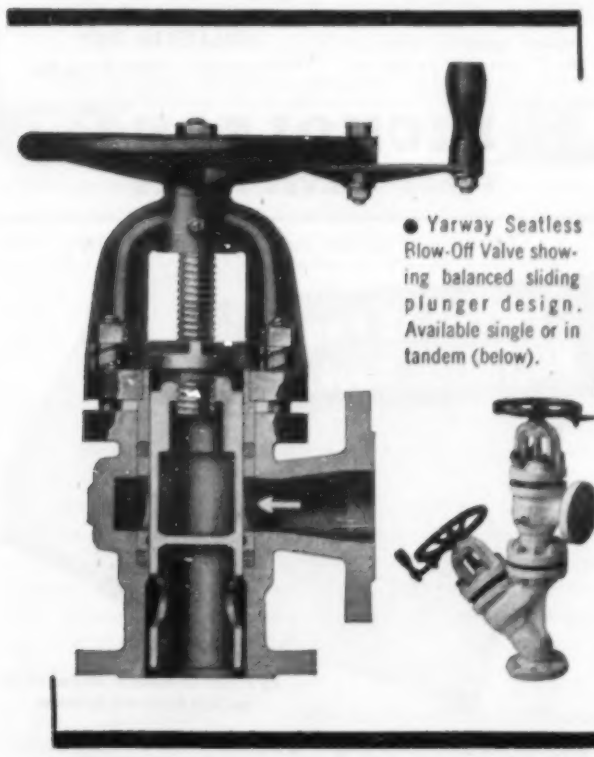
If you write maker identify as IEN - 103

KEEPS BOILER BLOW-DOWN LINES *DROP TIGHT*

Yarway Seatless Blow-Off Valves keep blow-down lines *drop tight* because *there is no seat to score, wear, clog or leak.*

The well-known balanced sliding plunger design—combined with the newest metallurgical developments—make Yarway Seatless Blow-Off Valves rate top efficiency for low and medium pressure boiler plants.

Among high pressure plants, Yarway Unit Tandem Valves are used by more than 4 out of 5.



● Yarway Seatless Blow-Off Valve showing balanced sliding plunger design. Available single or in tandem (below).

If you operate a boiler, be sure to send for the Yarway Blow-Off Valve Books—Bulletin B-426 for pressures to 400 psi or Bulletin B-433 for higher pressures to 2500 psi. Write . . .

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY blow-off valves

If you write maker identify as IEN - 105

TESTING . . Frequency converter delivers 60 va. of regulated 2,500 cycle power

Source: AVION INSTRUMENT CORP.
299-48 State Highway 17, Dept. IEN, Paramus, N. J.

To operate instruments

Model 2500 designates a new frequency converter that operates on 110-volt 60-cycle ac. to deliver a monitored output adjustable between 90 and 115 volts at 2,500 cycles and 60 volt-amp. maximum. Voltage regulation, within the specified input voltage limits, frequency regulation and harmonic distortion, are independent of the power factor between 0.5 lagging and leading. Voltage is regulated within ½ per cent. Frequency is within 0.04 per cent. Total harmonic distortion is within 1 per cent. The assembly is in a standard 19-in. rack. Height measures 16 inches. Weight is 63 pounds.

If you write maker identify as IEN - 106

VENTILATING . . Fume hoods designed for laboratory application

Source: A. B. STANLEY COMPANY
114 Florence St., Dept. IEN, Chestnut Hill 67, Mass.

Maintains even air velocity

Two designs are available in the company's new line of laboratory fume hoods. One employs a parabolic cutout, directly above the 37-in. sash opening, so air will be drawn from an unairconditioned room across the working surface at constant speed at any position of the sash.

The second design is particularly for use in air conditioned laboratories. In this case an inner chamber replaces the cutout and permits fresh air to be brought in around the open work area and then removed with the fumes by the exhauster to minimize loss of conditioned air from the laboratory space.

If you write maker identify as IEN - 107

TESTING . . Heat indicating crayons designed to melt at given temperatures

Source: TEMPIL CORPORATION
11 W. 25th St., Dept. IEN, New York 11, N. Y.

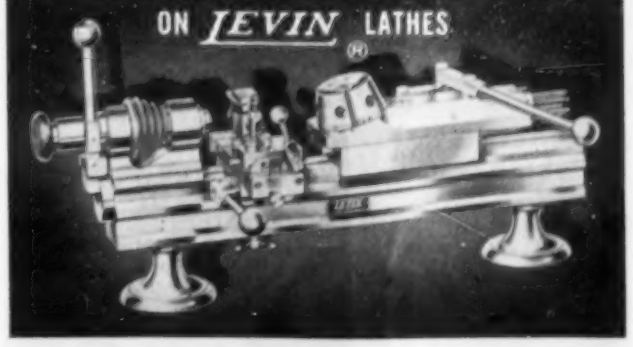
Accurate to a degree

Tempilstiks, to indicate 282 and 294 deg. F., have been added to the company's line of temperature indicating crayons or sticks, liquids and pellets. The two new units are particularly intended for use in connection with tire retreading. They provide a convenient means to check mold temperature by stroking them lightly over the mold surface. A liquid smear will show as soon as the temperature reaches the rating of the Tempilstik employed. The company offers a packaged set of five units for temperatures minimum at 275 deg. and maximum at 300 deg. F.

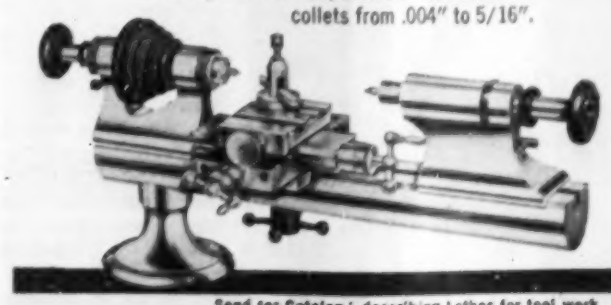
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 108

SMALL INSTRUMENT PARTS ARE MADE BEST ON *LEVIN* LATHES



Twenty-three models for all types of work. 4" swing, Bed Length 12" or 18"; over 100 stock sizes of collets from .004" to 5/16".



Send for Catalog L describing Lathes for tool work, second operations; turrets and full line of accessories.

LOUIS LEVIN & SON, INC., 782 E. PICO BLVD., LOS ANGELES 21, CALIF.

If you write maker identify as IEN - 109

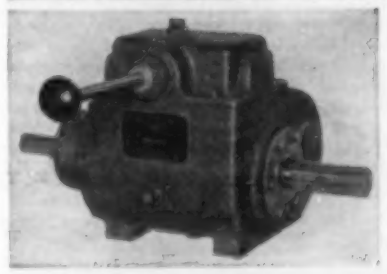
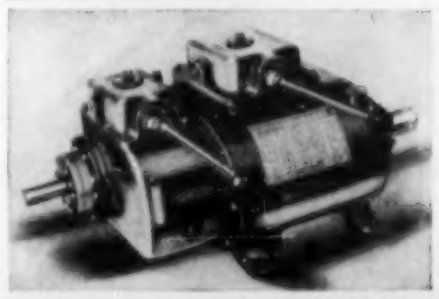


plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r.p.m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

8100-B (5-10 H. P.) 10 H. P. capacity with input speed of 900 r.p.m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.



9300 (30 H. P. capacity with input speed of 900 r.p.m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information

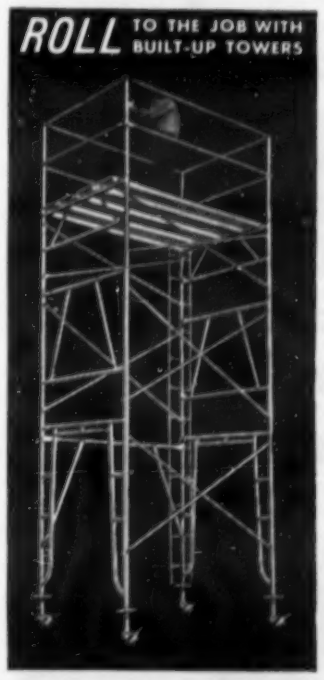
up to 100 h. p. **WESTERN TRANSMISSIONS**
For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Sinkers, Ball Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN MANUFACTURING CO. — 5555 BUCKLEY — DETROIT, MICHIGAN

If you write maker identify as IEN - 110

2 WAYS to S-T-R-E-T-C-H YOUR MAINTENANCE DOLLAR

LIKE SEVEN LEAGUE BOOTS, these practical work towers will *stretch* your working stride, help complete more work in less time. They speed overhead maintenance on plant equipment and buildings because they put your skilled hands *where the work is* . . . quickly and safely. SAFWAY work towers come in two useful types:

ROLL TO THE JOB WITH BUILT-UP TOWERS



Towers of any height or shape easily assembled with standard tubular steel SAFWAY Scaffolding. Parts are interchangeable—can be re-used in other forms. Built-in ladder. Swiveling casters lock at working position. 8, 12 and 16-ft. towers available in complete "packages."

RISE 7 TO 17 FEET WITH PUSH-BUTTON CONTROL

SAFWAY Moto-Lift reaches work 22-23 ft. high. Hydraulic lift extends 10 ft. in 25 sec. No electric connection—auto battery powers motor to raise tower 45 times per day on one charge. Recharges overnight. Tower telescopes to pass through low, narrow doors. Positive safety device.

Learn how you can complete elevated maintenance faster—cheaper—safer with these multi-purpose work towers. Write for this new bulletin.

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN-112

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN-113

WEBB

TOWVEYOR*

for FASTER, SAFER & EASIER MATERIALS HANDLING

FASTER travel from loading to unloading stations—trucks are delivered to proper destination without wasted traveling time.

EASIER handling—trucks engage Towveyor chain by lowering tow pin and are disengaged at any point by raising of tow pin.

SAFER floors—Towveyor eliminates overhead chains and supports and employees can safely walk or truck over any portion of the system.

Cut your costs with a Towveyor system that will efficiently speed up your materials handling.

*Towveyor is a registered trademark identifying floor truck conveyors patented, manufactured and installed by the Jervis B. Webb Company.

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN-114

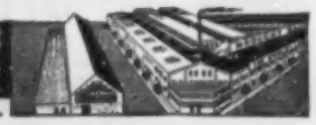
Geared to Industry's Production Demands Since 1887

MILWAUKEE WROT WASHERS

WASHERS STAMPINGS

Offering the most complete line of washers available today . . . all types and sizes, all materials, all finishes. More than 25,000 sets of dies. Let us quote on your requirements.

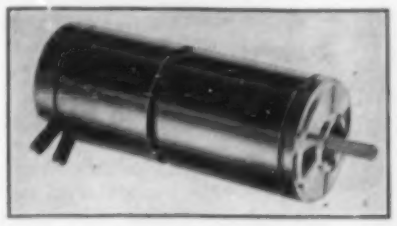
WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2047 S. BAY ST., MILWAUKEE 7, WIS.



If you write maker identify as IEN-115

CONTROL . . Servo equipment for precise remote positioning uses

Source: KEARFOTT COMPANY
1150 McBridge Ave., Dept. IEN, Little Falls, N. J.



Low rotor inertia

Illustrated is a new combination of low inertia servo motor in two-phase design and an integral damping generator for accurate performance without sacrifice in small size. The assembly weighs 7.6 ounces. It measures 1.062 in. in diameter by 3 in. in overall length. Excitation is on 110-volt 400-cycle ac. fixed phase and 57.5 volt 400-cycle center tapped control phase. Stall torque is 0.63 inch ounce. No-load speed is 5,900 rpm. Excitation for the generator is on 110-volt 400-cycle ac. Generator output is 0.5 volt per 1,000 rpm. Maximum speed for linear output is 5,500 rpm.

The stator assemblies of both motor and generator are integrally cast in a thermosetting plastic material to provide a rugged structure that permits through rotor bore. Stainless steel housings and cast stators protect against high temperature, humidity, vibration, shock.

If you write maker identify as IEN-116

ELEVATOR . . Portable hand unit for overhead maintenance operations

Source: SERVICE CASTER & TRUCK CORP.
545 N. Brownswood Ave., Dept. IEN, Albion, Mich.

The Bootstrapper

Load capacity is 500 lb. on the 3 by 5-ft. platform of this new caster mounted hand operated elevator. The operator can raise and lower the platform by turning a crank. He can move into a desired location and then lock the unit in place with a foot operated floor lock mounted between the swivel casters. The assembly illustrated has a 5-ft. lift and is equipped with guard rails that can be lowered for passage through a doorway.

If you write maker identify as IEN-117

MARKING . . Roll type machine to print on cylindrical containers

Source: SMITH ENGINEERING & TOOL CO.
191 Bay Ave., Dept. IEN, Glen Ridge, N. J.

For short runs

Turning a crank on this new hand operated machine rotates a rubber type cylinder to print upon the side of a cylindrical container mounted on rolls on the machine frame. Ink is fed from a reservoir by means of felt rollers to the rubber type. The supporting rollers can be adjusted in the frame to take containers to 16 in. in diameter. Height clearance is 8½ inches. As many as 600 containers can be marked in an hour.

If you write maker identify as IEN-118

SIGNALING . . Power megaphone extends normal voice range to ¼ mile

Source: STEWART-WARNER CORPORATION
1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

To direct activities

A microphone, a speaker and a set of six flashlight batteries make up this new electronic Power Megaphone. It has been developed for use in noisy departments, on construction jobs, in yards and in traffic control installations. It is fitted with a strap so the user can carry it readily. A trigger is depressed to make it ready for immediate action. The flashlight batteries are good for about three weeks of normal intermittent use based on eight hours per day.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-119

CESCO RIGHT... before your Eyes!

NEW

Approved by Bureau of Mines

Organic Vapor Respirator No. 99

• New CESCO twin 85 cc absorbent cartridge respirator has positive acting inhale-exhale valves which prevent rebreathing or exhausting through cartridges. Valves replaced without tools. Cartridges replaced by unscrewing retaining caps. B of M approval No. 2307.

Converts to Dust Respirator No. 96

• Replace vapor cartridges with CESCO filter pads to make No. 96 Dust Respirator. Treated wool-felt filters use entire frontal surface, provide maximum efficiency, little breathing resistance. B of M approval No. 2167.

Dual Purpose Saves Money

• CESCO Respirators have contoured facepiece for snug, comfortable, leak-proof fit. You buy only one respirator and elements as desired.

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN-120

NICHOLSON MAKES

FREEZE-PROOF Steam Traps

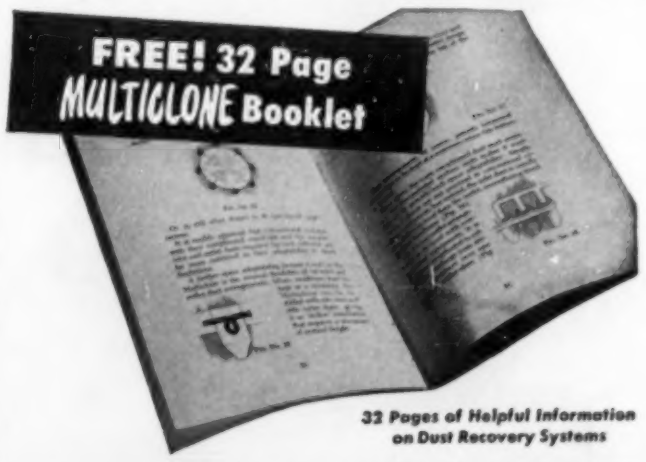
for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 250 lbs.

BULLETIN 853
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN-121



32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this 32 page Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION
DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Offices: 1611 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN-122

New

P&S

15 and 20 AMPERE SUPER SWITCHES

Designed for . . . Extra Long Life at Full Load . . . Maximum Service . . . Quiet Operation

Available in Single Pole, Double Pole and Three-Way—with Brown or Ivory Handles

Rated: 15 Amp., 120 Volt A.C., 277 Volts A.C.
20 Amp., 120 Volts A. C., 277 Volts A.C.

May be used on Fluorescent (Inductive) Loads and Incandescent Lamp Loads up to full rated capacity—on Motor Loads up to 80% of current rating of switch.

Drop us a line on your letterhead for complete information

Address Dept. IN

PASS & SEYMOUR, Inc., Syracuse 9, N. Y.
Offices: 71 Murray Street, New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as IEN-123

Better rubber products are made with Du Pont NEOPRENE

Neoprene gloves protect against acid burns and cuts . . . save 6¢ per man-hour

Sharp metal parts kept snagging the expensive heavy-gauge rubber gloves used in a midwestern plating company. Workmen's hands were exposed to acids and solvents . . . cuts and burns boosted the plant's injury rate. Finally, various types of gloves were job-tested over a 90-day period. One type proved ideal in every way—a gauntlet-style fabric glove coated with a special neoprene compound.

The neoprene-coated gloves gave maximum protection against snagging and the action of corrosive chemicals. They resisted deterioration and abrasion . . . provided safer, surer handling on the job. Soon there was less time lost through accidents and higher employee morale. And management was able to save 6¢ per man-hour on glove replacements, thanks to the durability of the new gloves.

By turning in top performances such as this, neoprene products are cutting maintenance costs throughout industry. While Du Pont makes no finished goods of neoprene, your manufacturer or distributor will be glad to tell you about the neoprene products he supplies.

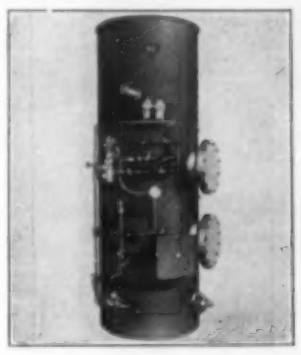
FREE! THE NEOPRENE NOTEBOOK
Each issue describes new neoprene products . . . improved old products . . . tips on reducing maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Div. IE-1, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN-125

CLEANING . . Abrasive blast machine operates without shut down to reload

Source: MACLEOD COMPANY
Box 452, Dept. IEN, Sharonville, Ohio



Bulletin 200

Auto-Blast is a new double chamber machine, known as Type EA, in the company's line of abrasive blast equipment. It is built in any size to meet specified requirements. It is characterized by its ability to operate continuously without interference from the reloading operation.

Abrasive is filled into one of the two chambers while the material, previously delivered into the other chamber, is being employed at the delivery nozzles. The stored material is mechanically "locked" into the operating chamber when it is needed and the storage chamber can be filled while the blast operation continues. The machine will supply the abrasive suspended in an air stream for use in rooms, tables, barrels or special devices.

If you write maker identify as IEN-126

PROTECTING . . Insulated shoe to keep worker's feet warm and dry

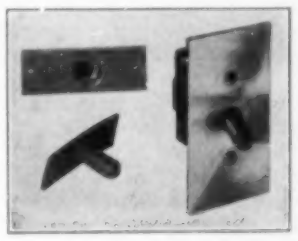
Source: RECORD INDUSTRIAL CO.
3301 Arch St., Dept. IEN, Philadelphia 4, Pa.

Catalog, "Thermo-Shu"

Thermo-Shu is a new steel toed safety shoe made of weather proof leather with Neocord sole and heel and with Foamex insulation between the outer leather and the inner lining of soft glove leather. The shoe was developed for the Armed Forces in winter maneuvers. It is available now for industrial use by workers who must spend long intervals outdoors in the cold.

If you write maker identify as IEN-127

Silicone rubber is employed in a new "boot" for application on toggle switches to seal the switch against entrance of moisture, dust or combustible vapors. The boot is known as Hexseal 2030. It applies back of the switch plate so its finger encloses the switch lever and projects through the plate with the lever. It is molded by Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Dept. IEN, Yonkers 5, N. Y.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-128

BIN STUCK LATELY?

Loosen it Up—with a CLEVELAND AIR Vibrator
Write For Our New Catalog No. 109.

THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN-129

THE ONLY SAFETY SWITCH IN SPECIAL INDUSTRY ENCLOSURE!

NOW—NEMA Type XII

• This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring protection from dirt, dust, oil and coolant.

Write for Bulletin SD-5. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-130

BRADY QUIK-LABEL PIPE MARKERS

FAST . . . POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy, Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

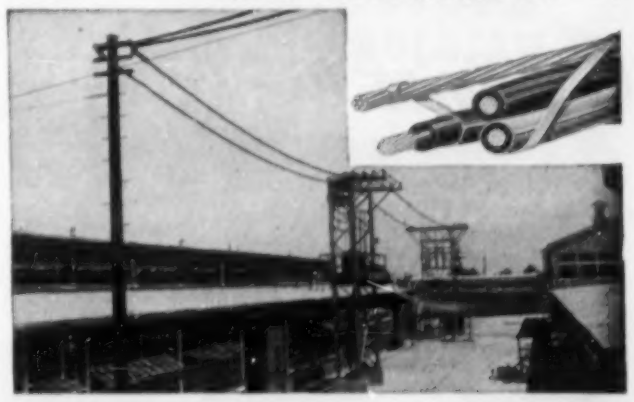
Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
124 W. Wisconsin Ave., Milwaukee 12, Wis.

If you write maker identify as IEN-131



Okonite Self-Supporting cables for economy, safety, improved operation

4,000 feet of Okolite-Okoprene Self-Supporting cable were installed in this modern glass works. A simple line tap, permitted by Okonite's Dualay construction, serves the 2300/440 volt steel platform substation.

Outdoors or indoors, wherever circuits can be supported overhead by beams, trusses, towers, poles or existing buildings, Okolite-Okoprene Self-Supporting cables provide a neat, dependable and economical method of power transmission. They provide greater safety and better voltage regulation. For detailed information write for Bulletin IE-1058. The Okonite Company, Passaic, N. J.

OKONITE *insulated cables*

If you write maker identify as IEN-132

it's a HORTON TANK for FIRE PROTECTION

Big plant or small — a Horton® elevated tank can assure you of an adequate water supply at all times for fire protection. Standard capacities from 5,000 to 3,000,000 gals. Write our nearest office for estimates or quotations. There is no obligation on your part.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
Salt Lake City • San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN-133

NOW... A POLISHER THAT'S UNIVERSALLY ADJUSTABLE

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns — such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN-134

quick to stick no need to lick!

AVERY Kum-Kleen self-adhesive LABELS

THE EASIEST AND MOST ECONOMICAL LABEL YOU CAN USE!

• TRADEMARKS • INSTRUCTIONS
• GUARANTEES • "BUY" FEATURES
• NAMEPLATES • WARNING
• DIAGRAMS • INSPECTION
• APPROVAL SEALS • PRICES

SAVE YOU TIME – MONEY!

An Avery label specialist will gladly explain how you can use Kum-Kleen pressure-sensitive labels profitably in YOUR business. Mail the coupon now for complete facts.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty St., New York 6 • 1616 S. California Ave., Monrovia, Cal.
608 S. Dearborn St., Chicago 5 • Offices in other principal cities

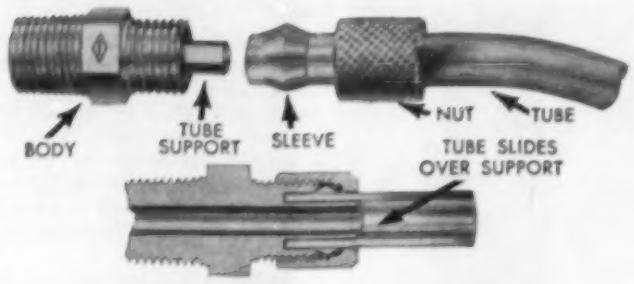
☐ Please send case histories and samples
☐ Tell us about your electric label dispenser
☐ Have the local Avery man call

Name
Title
Company
Address

If you write maker identify as IEN-135

TUBE FITTING . . Threaded connector clamps on 1/4 or 3/8 in. plastic tube

Source: IMPERIAL BRASS MFG. CO.
1200 W. Harrison St., Dept. IEN, Chicago 7, Ill.



Illustrated data in Bulletin 3025-A

Poly-Flo is a new brass compression type tube fitting for use with polyethylene tubing for instrument installations. The fitting can be finger tightened to hold pressure to 125 lb. in the 1/4-in. size and to 100 lb. in the 3/8-in. size. Burst pressures are respectively 400 and 350 pounds. Temperature range, which is limited by the tubing, is between minus 90 and plus 175 deg. F.

The fitting consists of the brass body with an integral tube support, a brass nut and a polyethylene sleeve. The sleeve slips over the end of the plastic tube. It grips the tube in place on the integral support when the nut is tightened. Fitting styles include unions, half unions, elbows, tees and bulk head unions as well as unions to connect to metal tube.

A Kwik-Disconnect shut-off valve is included in the line to permit free flow in either direction when the tubing is connected. It shuts off the flow, as soon as the tubing is disconnected, to permit disassembly of a line without disturbing the rest of the tube installation.

If you write maker identify as IEN-136

SIGNALING . . Ultrasonic alarm detects movement in protected area

Source: ALERTRONIC CORPORATION
4318 Van Dam St., Dept. IEN, Long Island City 1, N. Y.

Applies in closed areas

Ultrasonic vibration, generated in four nickel rods about 1/8 in. in diameter and 3 in. in length, actuates a semi-cylindrical diaphragm that mounts on a wall at one side of an area to be protected by this new alarm equipment. A similar diaphragm, in front of two nickel rods, mounts on the wall on the opposite side of the area to receive the vibration.

Any motion that disturbs the sound waves causes the receiver to transform the vibration into a minute current which feeds through an amplifier to sound an alarm. Sensitivity can be regulated. The equipment will detect fire as well as physical movement. It is approved by Underwriters' Laboratories. Insurance underwriters permit a maximum of 60 per cent discount on premiums where the equipment is employed under strict conditions and in connection with a central station alarm installation.

The rods are wrapped with copper wire and have nickel-iron magnetic strips at their ends. Operation employs the principal of magnetostriction for which nickel is particularly suited because of its property of contraction and elongation in connection with an alternating magnetic field. Vibration frequency at 19,200 cps., set up by a power supply operating on 110-volt ac., is beyond the hearing range.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-137

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from 1/4" to 2" and cap screws from 1/4" to 1 1/4", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V block has two 60-degree V's for centering round or hexagonal stock, one for 1/4" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stock for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN-138

FREE BULLETIN

Shows how to
★ Save time
★ Save floor space
★ Reduce handling costs

WITH NUTTING JACKS and SKIDS

On-the-job photos in Bulletin 48-JS demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install—and is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

Representatives in principal cities—Look under "Trucks" or "Casters" in classified phone directory—
Or SEND NOW FOR BULLETIN 48-JS

SINCE 1891 Nutting TRUCK AND CASTER CO.
2015 DIVISION ST., FARIBAULT, MINN.
Export Sales: School International, Inc., 4237 North Lincoln Ave., Chicago 18, Ill.

If you write maker identify as IEN-139

Now you can SPRAY HOT WAXES

WITH Sta-Warm ELECTRICALLY HEATED

Spray gun assembly, flexible heated hose and pressure tank.

Countless cost cutting applications are now open to wax users who must coat objects too large to dip. Learn about this recently developed Sta-Warm procedure in the new bulletin just published.

Inquire today outlining your current problem!

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 223

HERE IS A COMPACT DURABLE CHEMICAL TRANSFER PUMP FOR HANDLING PROCESS LIQUIDS

HIGH QUALITY

EASILY SERVICED

PEERLESS TYPE CTB PUMP

PEERLESS PUMPS

Liquid End Made of Type #20 Stainless Steel Alloy

Handles corrosive and abrasive liquids at moderate temperatures and pressures. Write today for Peerless pump Bulletin No. B-1606. Profusely illustrated with pump views, sectional drawings, elevations and dimensions. Contains complete head-capacity data and details of Peerless construction.

TYPE CTB CHARACTERISTICS

HEADS: 10-140 ft.
CAPACITIES: 10-250 gpm
HP RANGE: 1-10 hp
LIQUID TEMPERATURE: up to 250° F

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 224

MICRO Precision Switches

Install 9 MICRO switches to control 4-second gaging cycle

• Making plant equipment more automatic is the first step toward making its operation faster, safer and more productive.

Nine MICRO switches are installed here to control all the movements and timing of a gage built to check uniform profile and alignment of ammunition rounds.

The switches used in this application have die-cast enclosed housings and are protected against entrance of dust and dirt by a synthetic rubber boot. Roller arm actuators make perfect contact with the cams.

Full stocks of these and many other MICRO switches which plant superintendents, electricians and maintenance men have found invaluable for putting new life into present equipment, can be purchased from 174 Authorized Distributors in 154 key cities. Look under "Switches, Electric" in your phone book.

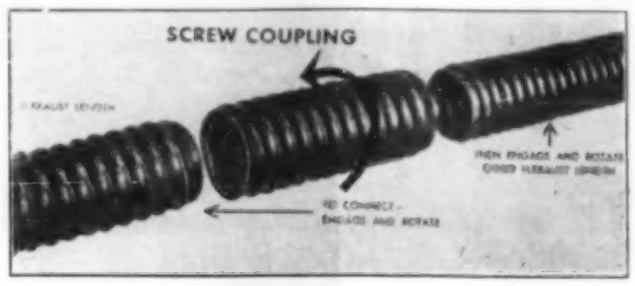
DO YOU READ MICRO TIPS? Ask to be put on our mailing list. It is crammed with practical ideas on how these switches are used to increase production.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

If you write maker identify as IEN - 226

VENTILATING . . Connector fitting for wire reinforced fabric duct

Source: FLEXAUST COMPANY
100 Park Ave., Dept. IEN, New York 17, N. Y.



Threads into place

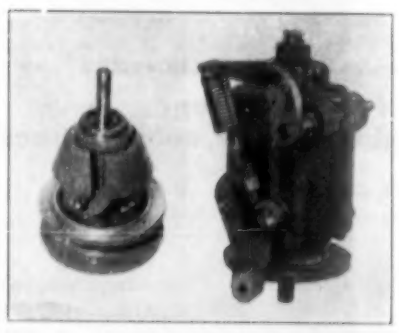
Three fittings have been developed to join lengths of the company's flexible wire reinforced fabric ventilating duct. A screw coupling is shown in the illustration. A screw cuff, in which one end of the coupling is fitted with a clamp for application on plain pipe, and a screw flange, made up of a section of the coupling and the plain flange, are included. The coupling threads on the convolutions of the tube. The duct can be employed in this manner or can be made permanent by cementing the joints.

The flanges are made of felt impregnated with neoprene. Thickness ranges from ⅜ to ¾ inch. Diameter is 7¼ to 17¾ inches. The flange fittings can be supplied plain or with bolt holes. Duct sizes range from 1¼ to 12 inch. Stock lengths of the duct are 25 feet. Other lengths can be supplied to order.

If you write maker identify as IEN - 227

CONTROL . . Centrifugal governor for diesel, gas and gasoline engines

Source: MASSEY MACHINE CO.
802 Pearl St., Dept. IEN, Watertown, N. Y.



Bulletin A-253

Type A designates a new centrifugal governor in stationary design for constant or variable speed and in marine design with an adjustable speed range. Two sizes include a No. 2 with capacity to handle a maximum of 6 Bosch fuel pumps or four 2-in. carburetors on speeds to 1,800 rpm. Number 3 is a larger assembly with speed maximum at 1,450 rpm. This larger unit is available in stationary design only.

Two flyweights are fulcrumed on ball bearings in a yoke from the spindle. They are fitted with legs carrying roller bearings which move a spool type sliding sleeve upward as centrifugal force moves the weights outward. A lever from the top of this sliding sleeve operates the governor terminal shaft that extends through the housing.

The governor develops 32.2 in. lb. of torque on the terminal shaft at 1,800 rpm., with a 4 per cent droop on full governor movement. Mounting can be either vertical or horizontal, with adequate provision to drain oil in both cases. Overall height of the aluminum housing is about 8¼ in. for the Type-A2 unit.

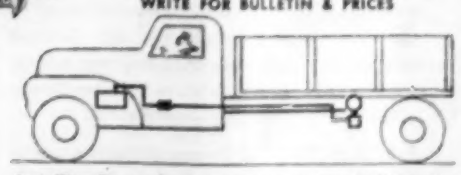
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 228

McDonald REVERSALARM keeps the road clear—BEHIND!

To protect workers in the path of backing-up trucks, equip your rolling stock with McDonald Reversalarm! Its powerful gong automatically sounds with unmistakable authority within the truck's first 8 inches of backward motion. Completely automatic—works even without truck motor running! Sturdy, weatherproof Reversalarm lasts for years — pays for itself many times over by preventing costly accidents.

WRITE FOR BULLETIN & PRICES



Write for Bulletin and Prices

Installing Reversalarm is easy. Its automatic interrupter switch connects to transmission speedometer cable take-off. Operates on 6- or 12-V systems.

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 229

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

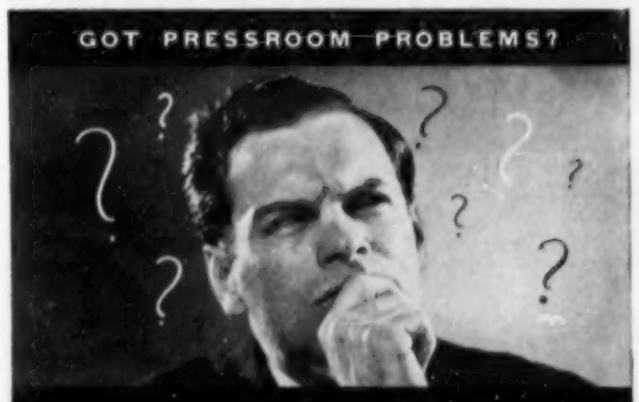
★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 230

GOT PRESSROOM PROBLEMS?



Solve 'em with
FEDERAL PRESSES

STANDARD — Non-repeat clutch—18 to 80 ton sizes—in geared or flywheel type.

DIAL FEED — Fast, accurate, safe—18 to 80 ton sizes—geared or flywheel type.

HIGH SPEED — Air clutch—electro-pneumatic controls—in 18 to 80 ton sizes.

SPECIAL — Capscrew, belt trimming and extruding presses—26 to 65 ton sizes.

Write for New Catalog No. 13 / THE FEDERAL PRESS COMPANY, 503 Division St., Elkhart, Indiana

If you write maker identify as IEN - 231

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST
In addition to stopping drip and keeping floors dry.

ANYONE CAN APPLY
Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME _____
ADDRESS _____
CITY _____ STATE _____

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN - 232

Surface PYROMETERS for every purpose

The routine use of CAMBRIDGE Surface Pyrometers takes the guesswork out of temperature determination in many industries. The CAMBRIDGE is accurate, dependable, rugged, quick-acting and easy to use. The Roll Model is for checking surface temperatures of still or moving rolls. The Needle Model is for insertion into materials in a plastic or semi-plastic state for within-the-mass temperature determination. The Mold Model is for checking surface temperatures of mold cavities and surfaces of almost any contour.

Send for Bulletin 194SA.

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal
New York 17, N. Y.

CAMBRIDGE
PIONEER MANUFACTURERS OF
PRECISION INSTRUMENTS

Moisture Indicators and Recorders • Physical Testing Instruments
Surface Pyrometers • Laboratory Instruments for A. C. & D. C. • Galvanometers
Engineering Instruments • Gas Analysis Equipment • Physiological Instruments
and many other Mechanical and Electrical Instruments

If you write maker identify as IEN - 233

BUCKET ELEVATORS

Jeffrey Vertically - Encased, Super - Capacity Bucket Elevator in a large stone quarry. For complete information on all types of Bucket Elevators, send for Catalog 850.

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

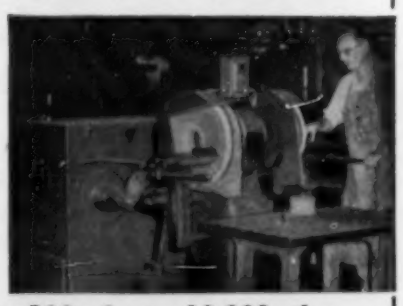
IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 234

STOP DUST
INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 235

HAMMER . . Pneumatic tool chips concrete from working equipment

Source: SUPERIOR PNEUMATIC & MFG. CO.
4758 Warner Road, Dept. IEN, Cleveland 25, Ohio

Cleaning a concrete mixer blade

Concrete mixing equipment and handling trucks are kept clean, with minimum chipping effort, by application of this new Big Bully pneumatic hammer. It is a 50-oz. 6-in. tool and is available with 28 chipping and star drilling points for a variety of light chipping work.

If you write maker identify as IEN - 236

WELDING . . Powdered flux for aluminum bronze such as Ampco 8

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

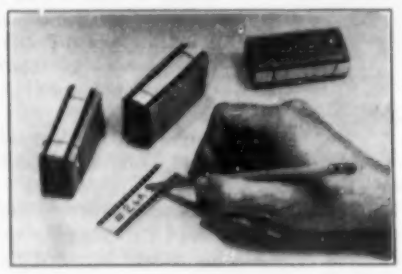
Packaged in pound jars

Ampco-Weld is a new flux supplied in dry powdered form to mix with alcohol and paint on the top edges and bottom of a thoroughly cleaned joint. It is employed with inert gas welding and bare Ampco-Trode filler rod. The flux removes oxides from the weld metal and reduces surface tension so the weld deposit will flow free and uniformly. It is intended for use on aluminum bronze sheet and plate. It also can be employed in joining other copper alloys such as silicon bronze, tin bronze and brass.

If you write maker identify as IEN - 237

MARKING . . Self-adhesive tape, transparent plastic over colored back

Source: LABELON TAPE CO.
448-52 Atlantic Ave., Rochester 9, N. Y.



Sizes to order

Markings appear when a hard pointed instrument is employed to write or print on the transparent surface of the company's tape. The marking is protected beneath the plastic facing and so is permanent. The tape is now available in cut-to-size strips measuring 1 to 6 in. in length with width from 5/16 to 3 inches.

The tape remains serviceable in a temperature range between minus 40 and plus 150 deg. F. It will not curl or discolor or come loose with age. Each label strip peels clean from its polyethylene backing prior to application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 238

STANDARD NOPAK CYLINDERS Meet Most Application Needs

Four standard model NOPAK Cylinders in standard diameters and stroke lengths, with cushioned or non-cushioned heads, will meet most of your usual requirements. In specifying these models you are assured of top quality at lower-than-average prices, prompt delivery "from stock", lower installation and engineering expense.

Ask your NOPAK Representative about NOPAK Cylinders and Valves "In Stock".

GALLAND-HENNING NOPAK DIVISION
2760 S. 31st Street • Milwaukee 46, Wisconsin

Refer to Sweet's File for Product Designers or write for Bulletin SW-2. Representatives in Principal Cities

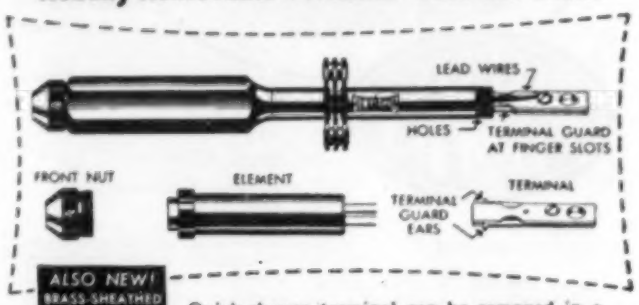
NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN - 239

NOW! CHANGE SOLDERING IRON ELEMENTS IN A JIFFY! —with HEXACON

*Patent Applied For

Readily Removable Terminal* does the trick!



ALSO NEW! BRASS-SHEATHED ELEMENTS Easier to Replace—Better Protection

Write for catalog showing 40 industrial soldering irons of every type and size.

Quick-change terminal can be removed in a second or two, permitting replacement of element in a fraction of the usual time. By simply depressing terminal guard at the finger slots, the terminal comes out in a jiffy – no longer necessary to fish element lead wires around terminal.

HEXACON — Industry's No. 1 Soldering Iron

HEXACON ELECTRIC COMPANY
155 W. CLAY AVE., ROSELLE PARK, NEW JERSEY

If you write maker identify as IEN - 240

The Simplest Way to SOLVE SCALE PROBLEMS

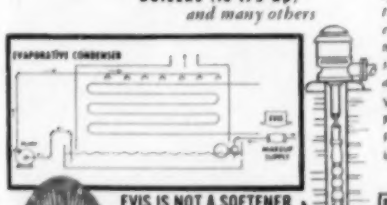
PATS. APPLIED FOR

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic clean-ups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.

Write for further information or ask your Plumbing Supply, Air-Conditioning-Refrigeration or Industrial Equipment Jobber.

SIZES | 3/4" thru 2" screwed; 2" thru 12" flanged



EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps

SOLD ON 90-DAY MONEY-BACK GUARANTEE

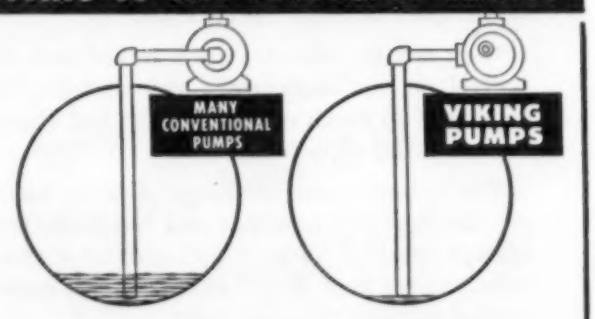
EVIS MANUFACTURING CO. 40 Beardman Place, San Francisco 3, California

FRANCHISED REGIONAL DISTRIBUTORS

WHITTIER (Calif.) REN-EVIS COMPANY 11700 E. Whittier, OX 9-2211
SAN BERNARDINO (Calif.) KNUPPE & WRIGHT 220 E. 40th St., SB 8-7816
SAN FRANCISCO NORTH-EVIS AGENCY 74 Dorman Ave., MI 7-1822
RENO WATER CONDITIONED SALES CORP. Western Amer. Life Bldg., 2-5819
SEATTLE EVIS-NORTHWEST 2617 E. Marginal Way, SE-0116
CHICAGO EVIS-GREAT LAKES COMPANY 203 N. Wabash Ave., ST 2-5948
OMAHA EVIS-MIDWEST, INC. 1504 Dodge St., JA 7044
DALLAS EVIS-SOUTHWEST CO. 5617 Chase Chase, EM 0137
ATLANTA EVIS SOUTHEAST CO. 735 Spring St., N. W., VE 0241
PHILADELPHIA EVIS-MIDEAST CO. 4 E. Richmond St., NE 4-0855
ALBANY (New York) EVIS-NORTHEAST CO. 57 Rapale Dr., LA 5-7921
EXCLUSIVE MARINE DIST.: MORAN-EVIS CO., SAN FRANCISCO 420 Market St., DO 2-4565

If you write maker identify as IEN - 241

GETTING TO THE BOTTOM OF THINGS



The difference to you between profit and loss can depend upon the simple, positive action of Viking Rotary Pumps. Their fast, thorough stripping action can mean that you get all you pay for when emptying barrels, tanks and other containers instead of leaving a part of each load. Where many other pumps fail, efficient stripping is possible with Vikings because of the suction lift created by our famous Viking "gear-within-a-gear" pumping principle.

Whether the liquid you want to pump is thick or thin, you will pump more . . . faster with a Viking.

What is your pumping problem? Send it along today and ask for bulletin 54SF.

VIKING AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 242

One of two Car Spotters in use at the Cuneo Press, Chicago, for over 20 years.

HERE'S a sure way to reduce demurrage charges

LINK-BELT CAR SPOTTER speeds spotting of cars for loading and unloading. That means reduced switching time and lower demurrage costs. And only one man is needed to move railroad cars. Add up these savings, and there's only one answer—lowered costs, money saved. Available in portable or stationary models for moving up to six loaded railroad cars.

LINK-BELT CAR SPOTTER

Send for Book 2092—for facts on car spotters and drum type pullers.

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 243

For wiping
for polishing—

low-cost KIMWIPES* do a better job
—end the risks of rags and waste

Here's a soft, clean, absorbent tissue made especially for precision polishing and tough-job wiping. Kimwipes industrial tissues are non-abrasive—you'll never have a worry about scratching, linting or disintegrating. Strong enough, too, for most any job, yet so inexpensive a fresh, clean tissue can be used every time. Two sizes—15"x18" and 5"x9". Order a supply from your distributor today or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMWIPES INDUSTRIAL WIPING TISSUES

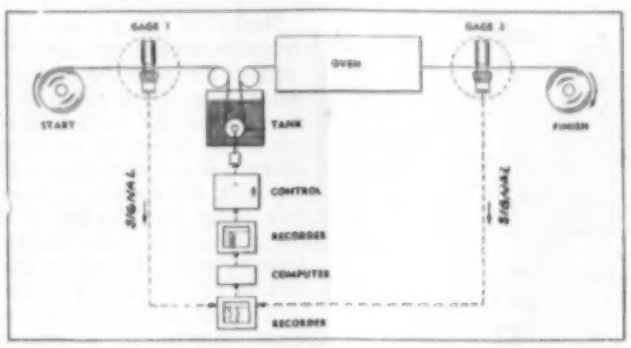
A Product of **Kimberly-Clark**

*T. M. REG. U. S. PAT. OFF. & CAN.

If you write maker identify as IEN - 245

CONTROL . . Electronic equipment governs plastic impregnating operation

Source: INDUSTRIAL NUCLEONICS CORP.
1203-7 Chesapeake Ave., Columbus 12, Ohio



Employs Strontium 90

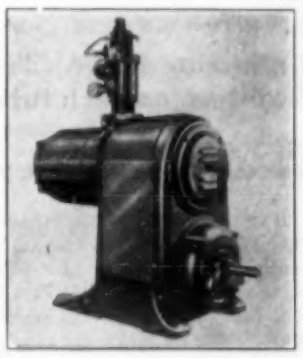
Two gages of the AccuRay radio active design, previously described IEN-1175-52, are employed as the actuating means in a new electronic control to govern the amount of plastic resin applied to a continuous run of paper. The gages are located on the paper feed side and on the finished side of the impregnating and drying equipment. Each directs radiation from a radio-active capsule through the sheet to a detector on the opposite face.

The detector measures the amount of radiation that penetrates the work and transmits it through amplifying equipment to an electronic strip chart recorder. The recorder feeds its signal to a ratio computor to gage the percentage of resin pick-up and from there through a ratio recorder to the electronic controller which actuates the dip roll in the resin tank. Two gages operate continuously while the paper is moving at 100 feet per minute.

If you write maker identify as IEN - 246

DRIVE . . Variable speed assembly with air control for remote actuation

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058, Dept. IEN, Los Angeles 54, Calif.



Uniform action

Variables such as flow, liquid level, pressure, speed, temperature can be employed to actuate the new air control that now is available on the Varitrol line of motor driven variable speed assemblies in ratings from 1 to 30 hp. Larger sizes, to 50 hp., can be specified.

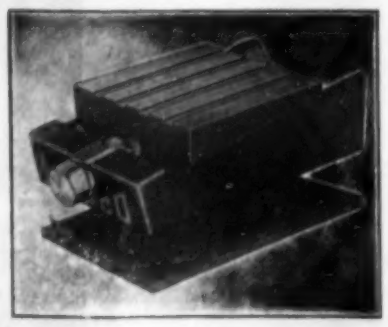
The control mounts on the main housing and employs a double acting pneumatic cylinder so air pressure can be applied on both sides of the piston for positive positioning. The piston connects to the pitch changing mechanism on the V-belt transmission inside the housing. Piston operation is by means of a small sensitive positioner that employs 3 to 15-lb. signal air to control power air, at 60 to 100 lb., from a shop source. The signal air can be derived from any of the standard control instruments now in use so the drive will control and limit or remain in step with the controlling variable.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 247

A PAID NEWS ADVERTISEMENT BY ENTERPRISE MACHINE PARTS CORP.

Improved Machine Leveling Jack is 50% stronger yet lower in height



Engineering improvements have made this Jack 50% stronger yet lower in height. This was accomplished by redesigning the Empco Jack so that the adjusting screw always remains cradled in the assembly. This insures full bearing of either front or back collar at any stage of operation.

Once the machine is set on Empco Jacks, the simple turning of adjusting screw with a hand wrench will lower or raise the machine until your level indicator reads "zero." With this feature, periodic machine leveling can be done in a matter of minutes.

To reduce vibration, Vi-Sorb Mounting Pads are available with each style Empco Jack. These pads substantially reduce vibration, the percentage of reduction usually depends upon the thickness of pad that is used.

Level machine installations with periodical re-leveling is essential to lower costs of machine maintenance. These costs are further reduced by the use of Vi-Sorb Mounting pads under Empco Leveling Jack.

Available in three styles: JC-1 (standard) and JC-2 (heavy duty) pictured here, and the newest style JS particularly designed for use with anchor bolts. Many models in all styles with minimum height ranging from 1⅞" to 4".

For complete specifications and prices write the Enterprise Machine Parts Corporation, 2737 Jerome Ave., Detroit 12, Michigan.

If you write maker identify as IEN - 248

REDUCE HANDLING
of Tools, Parts and Materials

Because Stackbins® are portable containers—not fixtures—tools, parts and materials can be carried to departments, from machine to machine, or held in stockroom without being transferred from one container to another. Stored in Stackracks®, any Stackbin is instantly accessible when its contents are needed—without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks*—individual units which lock together to form racks of any size, shape or capacity.

STACKBINS IN STACKRACKS

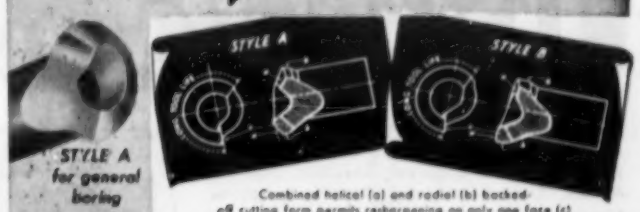
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 249

BOKUM BORING TOOLS are *Designed* for boring



Combined helical (a) and radial (b) backed-off cutting form permits resharpening on only one face (c)

STYLE A for general boring

STYLE B for bottoming and facing

STYLE C for internal threading

Design is based on a *mathematical formula* which guarantees correct cutting and clearance angles anywhere around the periphery of cutting head—maintained uniformly within limits of ± few minutes of 1°.

Bokum tools are available in 3 cutting materials: (2) carbide tipped, Cat. 398; (3) solid carbide, Cat. 948.

In range of sizes to bore holes from 1/16" dia. up.

To extend further the already long life of Bokum Tools, we recommend the Resharpening Fixture, Cat. AB1 and AB412. Tool holders, vertical adjustment and fixed position. Cat. 483.

Because Bokum Boring Tools are designed, they are uniform and remain uniform

BOKUM TOOL CO.
SINGLE POINT BORING TOOLS—INTERNAL THREADING, BOTTOMING AND FACING TOOLS—CARBIDE TIPPED TOOLS
DEPT. N • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

If you write maker identify as IEN - 250

FRASSE FACTS —on Cold Finished Steels

FREE from Frasse—these two pocket size booklets are packed with easy-to-find, easy-to-read information about cold finished steels.

..... Gives general description of Bessemer Steels, with mechanical properties of principal types, tables for machining speeds and feeds, sizes and tolerances of standard shapes.

..... Defines *shafting*, gives tolerances and characteristics of various finishes, including Turned and Polished, Cold Drawn, Centerless Ground, and Turned, Ground and Polished.

Frasse also offers—well balanced stocks of cold finished steels, practical engineering assistance in their application and speedy delivery. Let this combination work for you by making Frasse your source for cold finished bars. For your free booklets—and complete, quick bar service—write or call Frasse.

Call FRASSE 1st for COLD FINISHED STEELS

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N.Y.

Philadelphia • Buffalo • Syracuse • Hartford

If you write maker identify as IEN - 251

This Catalog WILL SAVE YOU MONEY SAVE YOU TIME

You may be surprised how many times you will find the right size sleeve bearing or bronze bar in the Johnson Bearing Catalog. The answer is over 90% of the times you look! Keep a copy handy. Order from your local Johnson Distributor by size or by catalog number. He has these standard, stock size Johnson Sleeve Bearings right in stock . . . also Universal Bronze Bars and Babbitt Metal.

JOHNSON BRONZE COMPANY
476 South Mill St., New Castle, Pa.

JOHNSON BEARINGS
Sleeve Type

If you write maker identify as IEN - 252

YES GAST customers HELP US . . . TO HELP YOU!

THEY DO IT WITH PERSONAL RECOMMENDATIONS! Recently we surveyed our new accounts (whose engineers specified Gast Air Motors, Compressors and Vacuum Pumps as components for *their* products).
Of these new accounts, we found that one-half were sent to us by other satisfied Gast customers! Also, a sampling from hundreds of accounts indicates an average O.E.M. customer has bought from Gast for 16⅓ years!

HOW DOES THIS HELP YOU? You can "specify Gast" with confidence—because you have *proof* that Gast service and products *satisfy users year-after-year—and earn their voluntary recommendations!*

IT PROVES EVEN MORE! Indirectly, it proves *the high quality of Gast products*—for only controlled high quality continues to please!

GAST HELPS DIRECTLY TOO—When you encounter problems on the application, installation or performance of Gast Products, our experienced engineers are ready to cooperate fully. Wherever Gast Air Motors, Compressors or Vacuum Pumps can do a job for you, we'll help make sure they do the *best possible job!*

Write GAST describing your specific application. Request Catalog and "Ideas" booklet.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., . . Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 253

photocopies in SECONDS!

with revolutionary **NEW** single unit

TRANSCOPY DUPLEX

Anyone can learn to operate Transcopy Duplex in a few minutes. Copies any original . . . written, printed, or drawn—up to 14½" wide and any length. And this compact all-in-one machine fits on one end of an office desk! No darkroom—no running water—no drying time. It's easy to install—connects with any standard electrical outlet.

GET ALL THE ANSWERS IN FREE FOLDER

Remington Rand

PROFIT-BUILDING *IDEAS* FOR BUSINESS

Room 1647, 315 Fourth Avenue
New York 10, N. Y.

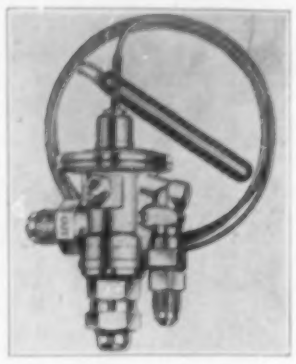
Gentlemen: Please send me a copy of folder P344, "In Seconds . . . One Machine . . . Exposes! Develops! Prints!"—about Transcopy Duplex.

NAME _____ POSITION _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 254

REFRIGERATING . . Expansion valve, temperature actuated to handle Freon

Source: A-P CONTROLS CORP.
2448-52 N. 32nd St., Milwaukee 10, Wis.



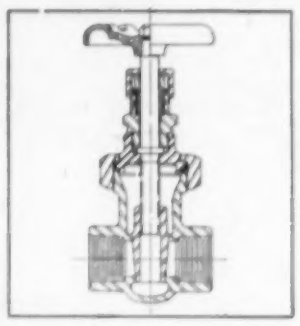
For one or more coils

Model 205 CE is a new thermostatic expansion valve for furnace air conditioning units, either new or replacement. It is available in 2 and 3-ton sizes for Freon 12 and 22. Its liquid charged power element permits use over the suction temperature range from minus 40 to the usual air conditioning temperatures. Mounting position is not critical. Temperature of the valve body, or ambient temperature, or position of the bulb will not interfere with correct functioning.

If you write maker identify as IEN - 255

VALVE . . Stainless steel gate unit with shell cast body and union bonnet

Source: COOPER ALLOY FOUNDRY CO.
212 Bloy St., Hillside 5, N. J.



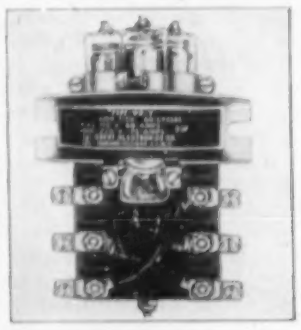
Corrosion proof

Clean finished exterior, non-rising stem to minimize product contamination, union assembled bonnet for quick access to the interior, characterize the construction of this new valve. It employs a guided precision cast gate made of the company's V2B non-galling alloy. The non-rising stem threads into the gate. Three sizes are ½, ¾ and 1 inch.

If you write maker identify as IEN - 256

RELAY . . Three tube mercury design, 60 amp. on 110 volt ac. on each tube

Source: EBERT ELECTRONICS CO.
212-26 Jamaica Ave., Dept. IEN, Queens Village, N. Y.



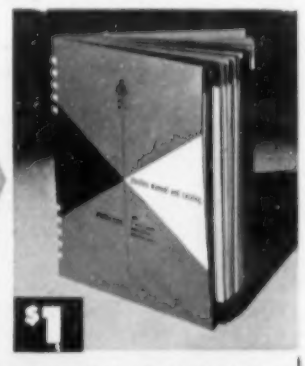
For heavy duty

Type HD-7 is a new three-tube assembly in the company's sealed mercury relay line, previously described IEN-11503-53. The relay is available as a normally open or normally closed assembly or in any combination of normally open and closed tubes. The mercury-to-mercury contacts are in sealed spark proof assembly and require no maintenance. Overall dimensions are 6 by 4 by 3 inches. Operation is silent and chatter-free.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 257

WHAT PLASTICS TO USE?



BIG NEW FRYCO PLASTICS MANUAL-CATALOG GIVES YOU PLASTICS FACTS

Over 100 pages—jam-packed with complete up-to-date plastics facts. The latest data on all types of plastics, complete with property tables, definitions and property explanations. Plus detailed information on how and where to use them. Includes such materials as Acetate, Lucite, Plexiglas, Vinyls, Saran, Nylon, Polyethylene, Polystyrene, Phenolics, Polyesters, Polyplastex, reinforced plastics, coatings and many, many others.

PLUS THE MOST COMPLETE CATALOG OF PLASTICS EVER COMPILED
Now you can buy plastics in experimental or production quantities

Hundreds of different items...listed complete with unit and quantity prices. Over one-half million items in stock! The most complete line of plastics in the world! Plastic pipe, plastics tubing, fiberglas, plastic sheets, rods and flat stock in any thickness, casting materials and many others. In fact, plastics for every need in ANY QUANTITY. Send $1.00 today or have us bill you or your company.

FRY PLASTICS COMPANY
Dept. IE-1, 7826 S. Vermont Ave., Los Angeles 44, California

If you write maker identify as IEN - 258

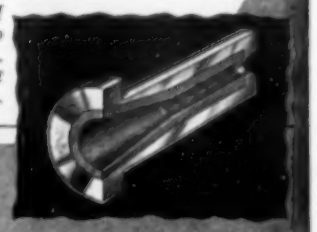
BORIUM

INCREASES BLAST NOZZLE LIFE

300 TIMES!

When you maintain orifice size, you maintain original blast velocity and efficiency . . . Particles hit harder, remove scale, dirt, grease and grime quicker!
That's why every BORIUM NOZZLE is lined with pure tungsten carbide—most wear resistant metal known! Holds orifice size longer, *frequently outlasts cast iron nozzles 300 times or more* when used with sand and most common abrasives.
Write for circular!

SPECIAL BORIUM LINERS built to your specifications. Send blueprint for quotation.



STOODY COMPANY
11930 EAST SLAUSON AVENUE · WHITTIER, CALIFORNIA

If you write maker identify as IEN - 259

THERE'S A STURDY BURKE FOR EVERY PURPOSE

Thousands of efficient, low cost Burke Bench Millers are proving their superiority in Tool, Development and School Shops and a wide variety of mass production operations.

Send for complete data on models attachments, accessories and suggestions for putting Burke's to work for your profit.

THE U. S.-BURKE MACHINE TOOL DIV.

Brotherton Road 5 Cincinnati 27, Ohio

If you write maker identify as IEN - 261

Is There an Eye Dropper in the House?

If it was purchased fairly recently, chances are it was made with the help of

"Folded-and-Formed" Heating Elements

Yes . . . the glass portion annealed and formed, and the rubber portion cured, in equipment electrically heated by these Trent patented elements.

This is just one of hundreds of different applications for "Folded-and-Formed" Heating Elements . . . unequalled for efficie cy and long-life economy. Made in Standard or Custombuilt Racks, arranged to provide any required K. W., at temperatures to 1350° F.

What is YOUR Heating Problem? Write for "Folded-and-Formed" literature, or consult our Engineering Department.

TREN INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as IEN - 262

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

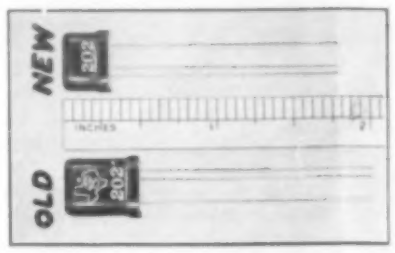
Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 264

ELECTRONIC PART . . Transistor performs functions of vacuum tube

Source: TEXAS INSTRUMENTS INC.
6002 Lemmon Ave., Dallas 9, Texas



New in stock

New design in the company's line of grown junction transistors employs a case that measures 0.3 in. in length. This compares to a previous 0.5 in. for the company's line. Connections are made through three 1½-in. tinned leads. They are suitable for soldering into a circuit or can be clipped and plugged into a sub-miniature socket. Construction features moisture proof glass-to-metal hermetic sealing and electrically insulating finish. Current amplification factor is guaranteed minimum at 0.90 in Type 200, 0.95 in Type 201, 0.98 in Type 202.

If you write maker identify as IEN - 265

ADHESIVE . . Quick setting glue for use in joining porous materials

Source: UNITED STATES PLYWOOD CORP.
55 W. 44th St., Dept. IEN, New York 36, N. Y.

For production and repair

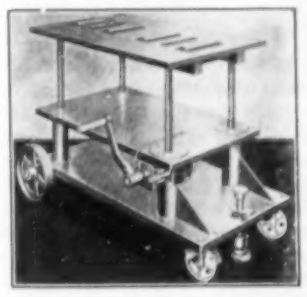
Weldwood Presto-Set is a new white polyvinyl liquid adhesive. It is a ready mixed material that sets on soft woods in about 30 min. and somewhat longer on hard woods. It attains maximum strength in 24 hours. Application can be made with temperature at 50 deg. or higher.

The adhesive will bond wood, hard board, cloth, leather, paper, in any combinations. It can be employed to apply a preserving film on maps or pictures, when diluted with water. It is colorless and almost odorless. Packaging is in 1½-oz. tubes to 55-gal. drums.

If you write maker identify as IEN - 266

ELEVATOR . . Portable lift table rates 1 ton, to handle bar stock

Source: HAMILTON TOOL CO.
905 Hanover St., Hamilton, Ohio



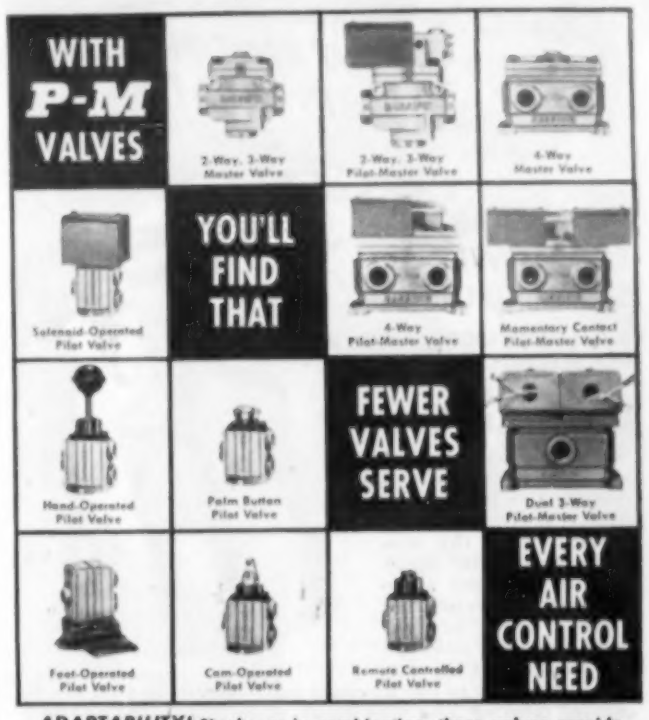
Removable crank

New assembly in the Portelvator line provides an 18 by 20-in. roller equipped table mounted on four hand operated jack screws. The screws are interconnected for rotation by a single lever to elevate the table top through a 14-in. travel from 20 in. above the floor. Two slots in the top permit application of slings from overhead lifting equipment to place bar stock on the table. The rolls permit moving it forward directly into a machine such as a cut-off saw. A floor brake mounts in the base.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 267

If you write maker identify as IEN - 268



ADAPTABILITY! **Singly, or in combination, these valves provide 2-way, 3-way or 4-way control. Hand, foot, cam or solenoid operated. Every pipe size from ¼" through 1¼". Write for Bulletin 231.**

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.
AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 269

NEW

Portable, Hydraulic "GUILLOTINE"

CUTS 1¼" WIRE ROPE!

Guillotine Model 10A with Integral Hand Pump

Tremendous cutting power . . . 22½ tons thrust!

Light weight . . . only 45 lbs. net. Take the tool to the job.

Positive blade retraction . . . will not jam.

Easy hand pump action.

ALSO AVAILABLE WITH

Electric or Compressed Air operated pump

Automatic, power-operated pump assemblies available that are also portable or may be permanently mounted for production application. Special high-power pump available for production cutting over 200 cuts per hour.

Write For Catalog. Dept. N-1

MANCO MFG. CO.
BRADLEY, ILLINOIS

If you write maker identify as IEN - 270

CHECK . . . COMPARE . . . and you'll choose this saw!

In its class, this Model H is tops. It's the economy, hinge-type model in our complete line. Other models feature FULLY automatic operation. Send for catalog today!

SPECIFICATIONS
Size 9" x 16"
Blade Size ¾" x .032 x 11 ft. 6"
Floor Space 20" x 66"
Blade Travel 60, 90, and 120 ft. per minute
Swivel Vise 45 degrees in either direction
Wt. Appr. 500 lbs.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as IEN - 271

BECKER CO_2 POWERED SPRAY GUN . . .

NO COMPRESSOR • NO HOSES NO ELECTRICAL OUTLETS NEEDED

USE IT ANYWHERE!

It's such a handy, *portable* production tool that literally hundreds of industrial spraying jobs are possible with the new Becker "Model 50" Spray Gun. It's the most versatile unit yet devised for spraying paints, oils, solvents, protective coatings, etc. Powerful CO_2 cartridge sprays up to one 21-ounce containerful; or tank can be charged from air hose (for liquids atomizing at 120 psi) with special attachment. Nozzle adjusts from spray to stream . . . removes without pressure loss. Ruggedly built with precision-machined brass and stainless inserts; heavy gauge steel container and cast aluminum head.

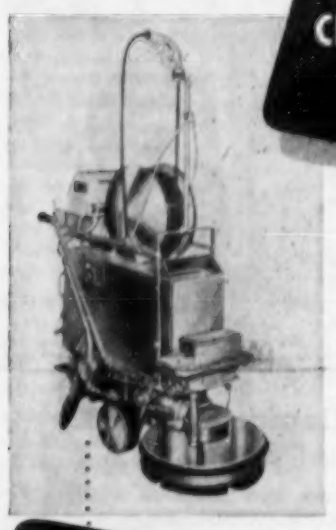
Only $19.95 with 10 cartridges

SEE YOUR DISTRIBUTOR or order direct, postpaid. Extra CO_2 cartridges at your dealer's, or 10 for $1, postpaid . . . also cartridges in case lots. Write for further details.

SULLIVAN-BECKER CO., Dept 194-A, Kenosha, Wis.

If you write maker identify as IEN - 272

Self-Propelled SCRUBBER-VAC . . . . . CUTS CLEANING TIME 2/3!



For **Small-Area Factories (2,000 to 15,000 sq. ft. of floor)**

The *418P Finnell Scrubber-Vac* cleans floors in about *one-third the time* required with a conventional 18" scrubber-polisher. Also handles the dry work—polishing, steel-wooling, etc. No switches to set for *fast* or *slow*. 18" brush ring. *Quiet* vac. The machine can be leased or purchased.

Applies cleanser, scrubs, and picks up—in ONE operation!

FIND OUT WHAT YOU WOULD SAVE . . . with a *Finnell Scrubber-Vac*. Finnell makes several models and sizes. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2601 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 273

- Anyone can use it
- No Chance for Error!
- Meter Tells the Story!
- For AC Motors

POSITIVE . . . meter needle indicates short in coils of stators or armatures and reveals loose bars in rotors

FAST . . . No time wasted with hacksaw blades or guesswork. "Pinpoints" the location.

EASY . . . no training or experience needed. Meter gives the answer.

• CHECKS 115V. to 440V., stators 6" and up I.D.; armatures or rotors 6" to 14", operates on 115 V. AC.

MAIL FOR COMPLETE DATA

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street
Woodstock, Illinois

Please send full catalog information about the New Crown Internal Growler to:

Name_____
Company_____
Street_____
City_____ Zone____ State_____

If you write maker identify as IEN - 274

ELEVATOR . . Motor driven table mounts in floor, raises and lowers load

Source: RODNEY HUNT MACHINE CO.
48 Mill St., Dept. B, Orange, Mass.

Holds at any height

Illustrated to the right and left of the operator are two of the company's new Benchvator power list tables. Above the operator are pendant push button stations with which the tables are raised and lowered independently through a maximum 36-in. standard stroke.

Each table will take a 5,000-lb. load on its keyed and threaded column. The motor drive is geared to this column from its position beneath the floor. Limit switches prevent over-running. The key prevents turning. Lift and lower speed is 28 inches per minute.

If you write maker identify as IEN - 275

CLEANING . . Coating liquid prevents adhering of glue, paint, resin

Source: POTDEVIN MACHINE CO.
285 North St., Dept. IEN, Teterboro, N. J.

Adhesives wash off

Release-Cote is a new liquid material for brush, rag, sponge or spray application on the surfaces of pots, tanks, rollers, shafts, feed tables and exposed surfaces of equipment handling materials such as adhesives, lacquers, resins, paints. The film prevents the materials from adhering to surfaces that have been coated so they can be cleaned quickly with warm water or a water rinse. Rubbing a small amount of the material on a worker's hands also prevents adhesives from sticking to the skin. The material is free from harmful irritants, fumes or offensive odor. It is packaged in quarts, gallons and 5-gal. drums.

If you write maker identify as IEN - 276

HEATING . . Gas fired furnace, bottom charged to process ceramics

Source: WALTZ FURNACE CO.
1901 Symmes St., Dept. IEN, Cincinnati 6, Ohio

Nine feet overall

Work is loaded on a four-wheel elevating table for introduction into the 12 by 12 by 12-in. work chamber in this new furnace. The table is moved beneath the furnace and then is elevated with a hand crank to bring the work up into place and seal the bottom opening. Operating temperature is to 2,800 deg. F. Progress of the work can be watched through observation ports. The furnace employs premix pressure burners. It was built to order.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 277

Tough! Flexible! Fire Resistant! U. S. ROYAL CORDS AND CABLES

For light, power and control applications, United States Rubber Company offers a complete line of electrical conductors, power cables, flexible cords, flexible power cables, signal and communication cables.

For more information write the nearest U. S. Rubber Branch or the address below.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 278

PLASTIC MOLDERS . . . Remove One Variable From Your Process

Feed exact quantity whether you starve feed or feed with a cushion. An EXACT WEIGHT Automatic Net Weighing Machine on your injection molder makes possible precise weighing of every charge. EXACT WEIGHT Weigh-Feeders are backed by 40 years of specialized experience in precision industrial scales and offer you these important advantages:

- **Precision EXACT WEIGHT Industrial Scale**
- **Visual Weight Indication of EVERY Charge**
- **Rapid, Easy Changeover and Adjustment**

Exact Weight Scales
Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St. W., Toronto 18, Canada

If you write maker identify as IEN - 279

ONE MILLION RELAYS

Over 1000 Types
24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Write for New 16 Page Catalog

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Send us your relay requirements. You will receive immediate quotations.

samples on request. Phone, Write or Write

Relay Sales
SEeley 8-4146
4721 W MADISON STREET
DEPT. NO. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 280

MACLEOD ABRASIVE BLAST EQUIPMENT

Macleod Portable Blast Machine
Available in wide range of sizes and capacities. Designed for use with any type abrasive and has added feature of convenience of maneuverability.

Macleod Stationary Blast Machine
Designed for use where speed and strong abrasive action are factors. Uses any form of abrasive and is available in range of sizes and capacities. Special sizes in both Stationary and Portable Machines made to order.

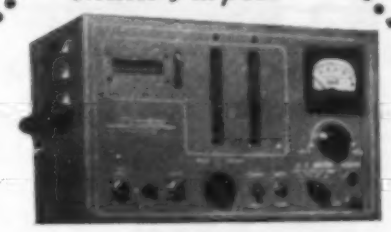
Macleod Auto-Blast
Completely new double-chamber direct pressure blast cleaning machine (shown above). No shut-down time for reloading. Can provide 24-hours-a-day continuous blasting.

Write for additional information or send specifications for estimate to Dept. IE. Several desirable territories available for aggressive distributors

The MACLEOD Company
BOX 452, SHARONVILLE, OHIO ESTABLISHED 1897

If you write maker identify as IEN - 281

Multi-Purpose



LABORATORY

POLI-SCALER

Versatile
Compact
Precise
Low-Cost

The Detectron DS-606 Poli-Scaler is a complete laboratory scaler of exceptional versatility. Adaptable to GM and scintillation counting and frequency checks. Power supply may be used for either GM input or to operate accessory equipment.

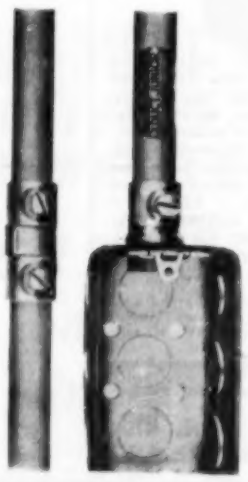
PULSE HEIGHT DISCRIMINATOR INPUT – 2 to 100 V
POSITIVE or NEGATIVE PULSES – 2-100V Pos. 2-50V Neg.
RESOLUTION TIME – 5 Microseconds per pulse pair or less
HIGH VOLTAGE POWER – Variable in 1-step from 0 to 2.5 kv.
COUNTING RATE – 1,000 per sec. max.
ACCESSORY SOCKETS –for count rate meter and speaker
DIRECT READING – to 99,999,999

Write for FREE Folder 75

THE *Detectron* CORPORATION
5420 VINELAND AVE., NO. HOLLYWOOD, CALIF.

If you write maker identify as IEN - 282

NEW Fittings for E.M.T. are VIBRATION PROOF



Unusual holding action of the screw is obtained when the screw is driven home on the boss and the tip of the screw becomes embedded in the tubing wall. The connection is a vibration proof bond that cannot be broken or loosened except by releasing the screw.

Couplings and connectors available for 1/2, 3/4 and 1 inch electrical metallic tubing.

ADVANTAGES . . .

- RE-USABLE
- ECONOMICAL
- EASY TO INSPECT
- UNIFORM, SAFE HOLDING ACTION
- CLOSE, ACCURATE FIT
- PERMANENT GROUND
- ELECTRO GALVANIZED
- PRESSED STEEL CONSTRUCTION
- INSTALLED WITH SCREWDRIVER
- APPROVED BY UNDERWRITERS' LABORATORIES, INC.

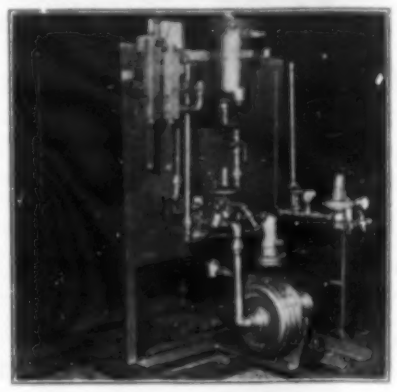
ASK FOR BULLETIN 581

National Electric Products Corp.
140 Stanwix Street Pittsburgh 22, Pa.

If you write maker identify as IEN - 284

HEAT TREATING . . Gas generator produces protective furnace atmosphere

Source: FERGUSON EQUIPMENT CORP.
Penn Ave. & 21st St., Pittsburgh 22, Pa.



Endothermic Type

Propane, natural or manufactured gas and air are passed through an adjustable proportional mixer and are pumped by a centrifugal compressor through a catylitic type heated retort in this new atmosphere generator. The resulting protective atmosphere can be produced for bright annealing, for carburizing or carbonitriding operations. The generator will maintain a given setting in automatic operation after it has been put in service and adjusted for a given heat treating operation.

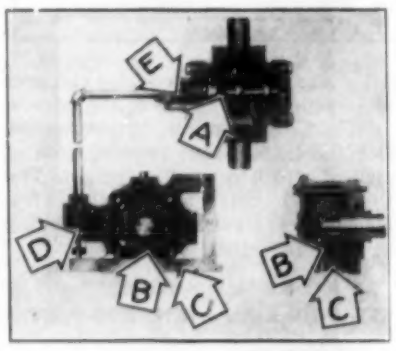
The reaction chamber is electrically heated in the assembly illustrated. Models also are available with fuel gas heat. Metallic and non-metallic reaction chamber retort can be supplied, the former being recommended for intermittent operation since it requires less conditioning after shutdown.

The smallest assembly in the line rates 250 cfh. It measures about 4 by 2½ by 4½ feet. The largest unit rates 3,000 cfh. and measures about 6½ by 4½ by 6½ feet. List price of about $1,500 covers a 250-cfh. unit with control equipment ready for operation.

If you write maker identify as IEN - 285

VALVE . . Safety stop design closes upon excessive turbine speed

Source: COPPUS ENGINEERING CORP.
341 Park Ave., Worcester 2, Mass.



Independent of governor

New design of the company's previously developed safety stop valve encloses the balanced valve stem inside the body to protect it and to prevent possible sticking in the closing or opening actions. The valve is available as a replacement for existing stop valves. It is standard design on the company's steam turbine.

The pressure balanced piston A is held in normally open position to permit steam to pass through to the turbine by the spring E. It remains in this position until the fly weight on the turbine shaft is moved outward by centrifugal force to act against the lever C. This opens pilot valve D and releases pressure on one end of the piston. Pressure inside the valve then causes the piston to move the valve to closed position where it remains until the lever C is manually reset. This closes valve D, permits pressure to build up back of the balanced piston and spring E moves the valve to open position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 286

USE THIS NEW SAFETY MATERIAL ALL OVER YOUR PLANT

Work platforms

Safety **GRIP-STRUT** Pat. Pending

NON-SKID—RUGGED—LOW COST

Safety Grip-Strut is a new basic material. All one piece, steel or aluminum, in various sizes and gauges. Sold like lumber, used like lumber and stocked in your storeroom like lumber. Ideal for on-the-job fabricating. Not welded, riveted or expanded. It presents an open space, in a diamond shaped pattern, in excess of 75% of the area for ready access of light and air and gives a positive NON-SKID footing in all directions. Ideal for stair treads, fire escapes, cable trays, work platforms, catwalks, flooring and for original equipment safety treads. Your own mechanics can install it—it's inexpensive, yet permanent and safe.

Write today for new catalog showing loadings and methods of easy application in your plant.

Distributors in all principal cities.

GRIP-STRUT division
THE GLOBE COMPANY
Manufacturers since 1914
4010 S. Princeton Avenue • Chicago 9, Ill.

If you write maker identify as IEN - 287

New MERCURY "BANTY" GAS TRACTOR

Available in Two Capacities: 2300 and 3000 lbs. DBP.

Model 460

Over 41 years experience in the manufacturing, designing, and installation of material handling equipment.

MERCURY

Here it is...the completely new MERCURY "Banty." A small, rugged 4 wheel gasoline tractor with a turning radius of only 62". Features new double reduction drive axle with demountable wheel rim and tire assemblies... self-energizing hydraulic brakes ...new semi-elliptic spring suspension, front and rear...cushion or pneumatic tires.

For complete information write:
MERCURY MANUFACTURING COMPANY
4132 S. Hiasted St., Chicago

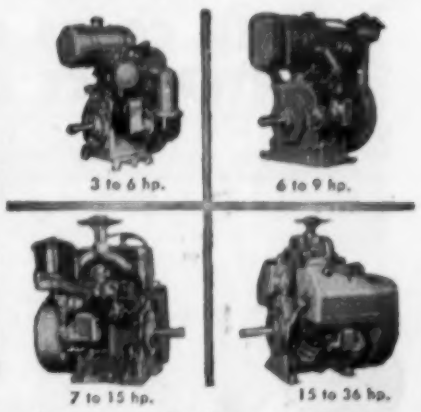
If you write maker identify as IEN - 288

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 289

Most Specified... Most Used...
WISCONSIN
HEAVY-DUTY
Air-Cooled
ENGINES



Specified as integral power units by more than 500 original equipment manufacturers . . .

Delivering dependable, efficient power on a greater variety of service applications than all other makes of engines combined, in a 3 to 36 hp. range . . .
Supplying Most H.P. Hours of heavy-duty on-the-job power in all weather, all climates . . .
Constantly demonstrating the outstanding efficiency and trouble-free dependability of AIR-COOLING . . .
These are some of the factors worth considering in the selection of engine power for YOUR equipment. Detailed engineering data and descriptive literature on request.

Power to Fit the Machine

Power to Fit the Job

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 290

Specify Eastman
HYDRAULIC HOSE ASSEMBLIES

● Profit from Eastman's 26 years' experience in Hydraulic Hose Assemblies. Pressed-on, re-usable and renewable couplings and insert type fittings for high and low pressure air, gas, water, paint, grease and hydraulic hose...from ⅛" to 2". Pressure lines up to 5000 psi. Also suction and low pressure units.

WRITE FOR COMPLETE CATALOG OR PHONE YOUR SPECIFICATIONS

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN-1, Manitowoc, Wisconsin

Eastman
first in the field
HYDRAULIC HOSE ASSEMBLIES

If you write maker identify as IEN - 291

MODERN TIME AND COST SAVERS
BUILT BY... Standard
GRAVITY & POWER CONVEYORS

FASTER HANDLING IN SHIPPING ROOMS . . . with the HANDIBELT

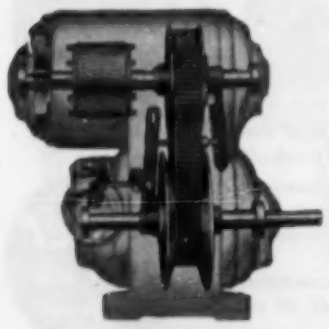
Conveys bags, cartons, boxes horizontally or at any decline and incline angle within its range. Easily wheeled about by one man — easy to adjust and use — fits in crowded aisles, cars and freight elevators. Handles packages up to 135 lbs. TWO SIZES: No. 11 Handibelt, 11 ft. long, piles to 7 ft. 6 in; No. 16, 15 ft. 9 in. long, piles to 10 ft. 6 in. Write for HANDIBELT Bulletin — address Dept. IEN-14.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 292

POWER COSTS CUT 15%
MAINTENANCE CUT 75%

Modernization of our multiple spindle drilling machine with a Speed-Trol drive, reports Mr. William L. Thomas, Plant Engineer of Utica Drop Forge & Tool Corp. of Utica, N. Y., enables us, for the first time, to utilize the full productive capacity of this machine. Power costs were cut 15%, maintenance was reduced 75%. We are able to adjust speeds quickly and accurately to correct drilling requirements with Sterling's fingertip control of speed.



STERLING SPEED-TROL

OUTSTANDING FEATURES:
Infinite speeds—positive speed regulation—fingertip control—large indicator—positive pulleys—no springs—belt tension in proportion to load—protected—streamlined—Herringbone Rotor—through ventilation—versatile mounting—NEMA dimensions—shock absorbing—quiet operation—rugged—compact—dependable—long life.

20-page illustrated catalog . . . Sterling Speed-Trol, Sio-Speed, Kload and Kload-Tite Electric Power Drives. Write for catalog No. B-422.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago, Illinois; Los Angeles 22; Hamilton, Canada; Santiago, Chile • Offices and distributors in all principal cities

USEFUL INFORMATION

NEWS NOTES

If you write maker identify as IEN - 293

ALUMINUM . . Color sound movie describes welding of aluminum pressure vessels

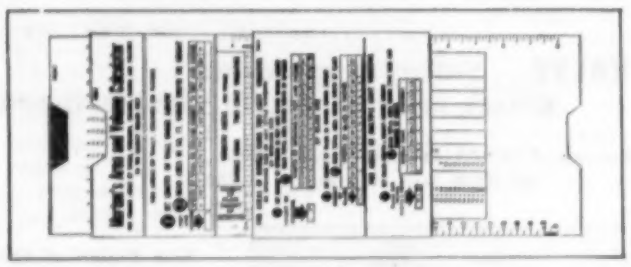
Aluminum Co. of America
1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

Manual, automatic and semi-automatic methods of welding aluminum are shown in new 28-min. 16-mm. color motion picture, "Welding Advances with Aluminum." Tungsten arc and consumable electrode equipment with inert gas shielding is shown in action for pressure-vessel welds, casting repair, fabrication. The film is available on loan for group showings.

If you write maker identify as IEN - 294

BUILDINGS . . Plastic slide calculator for areas of floors, walls, ceilings, windows

Paul S. Morton Engineering Services
607-11 Bangor Road, Lawrence, Mich.



Face of new Area and Volume Calculator enables the user to determine areas of walls, ceilings and floors to the nearest square foot. Wall area is found, for example, by setting the slide to wall length in feet and inches, then reading area at a window against a range of width or ceiling height. The setting for floor area is employed on the back of the calculator to determine room volume against a choice of ceiling heights. The unit lists at $4.75 including a case.

If you write maker identify as IEN - 295

CASTINGS . . Conference and plant tour arranged by the company for its customers' engineers

Superior Steel & Malleable Castings Co.
307-11 Graham Harbor, Benton Harbor, Mich.

Proceedings of a conference held last November at the company's plant have been printed and will be sent you on request. The conference carried the title of Customer/Foundry Work Shop. It was intended to give design engineers of the company's customers a chance to get acquainted with production of steel and malleable iron castings, design points, properties, problems. Several technical papers were presented.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 296

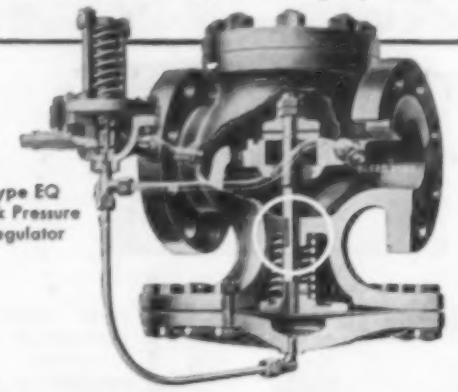
22.6% more air
PER POWER DOLLAR

By actual test, DeVilbiss air compressors deliver as much as 22.6% more air per power dollar. Efficiency like this combined with great care in manufacture and assembly are reasons why a DeVilbiss compressor pays for itself out of power savings alone. Full range of pressure. Types available from ½ through 15 h.p. Write today for full details.

DEVILBISS
THE DEVILBISS COMPANY
Toledo, Ohio
Barrie, Ontario • London, England • Santa Clara, Calif.

If you write maker identify as IEN - 297

another SPENCE *design feature*



Type EQ Back Pressure Regulator

No Stuffing Boxes . .

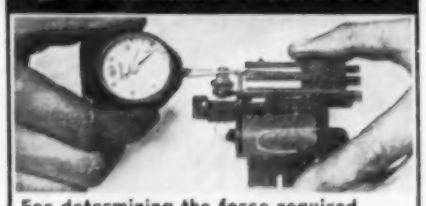
In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 298

NEW PRECISION DYNAMOMETER



For determining the force required to actuate delicate mechanisms.

Here is a new instrument that has quickly become an indispensable aid to measure, calibrate and standardize the pressure or power required to actuate fine precision mechanisms and spring tensions of ELECTRIC CONTACTS - RELAYS - CLOCKS - TELEPHONES - BUSINESS MACHINES - MICRO MOTORS for Electric Razors - WINDSHIELD WIPERS - TIME SWITCHES - ETC. . .

THE DYNAMOMETER IS AVAILABLE IN 2 SIZES WITH OPERATING PRESSURES RANGING FROM 5-15 GRAMS TO 100-1000 GRAMS.

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
200-EN Lafayette St. • N. Y. 12, N. Y.

If you write maker identify as IEN - 299

Which of these Materials Needs More *Efficient* Handling in Your Plant?

abrasive solids and chemicals in suspension • acid slurries and sludges • caustic liquors • milk of lime • soda ash • tailings • slag • ore concentrates • residue from filters and classifiers • coal • silt • washery solids • cement and glass sand slurries

Delivered 'round-the-clock (with fewer breakdowns) by

MORRIS TYPE R SLURRY PUMP

Longer uninterrupted service because:
- No internal studs to cause leakage
- Low pressure stuffing box practically eliminates packing troubles
- Impeller and liner removed without disturbing piping
- Moving parts available in various corrosion/abrasion-resistant alloys

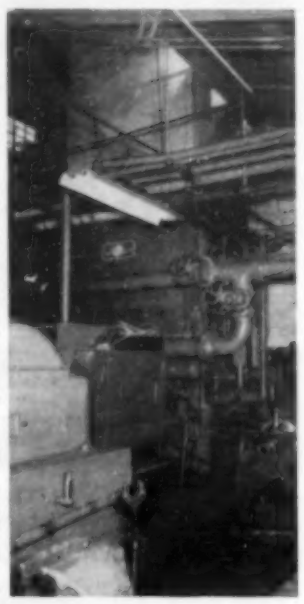
Specifications and operation data on request. No cost — no obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS *Centrifugal Pumps*

If you write maker identify as **IEN - 300**

YOU GET TRUSTWORTHY LIQUID or GAS COOLING Plus Great Water Saving



● With the NIAGARA AERO HEAT EXCHANGER you can cool air, gas, water, oils, chemicals, jacket water for engines or process equipment. You get lower costs and really accurate control of temperature. You have a closed system of cooling, free from dirt and maintenance troubles.

The Niagara Aero Heat Exchanger uses atmospheric air to cool liquids and gases. Great saving in cooling water, piping and pumping and power return the cost to you quickly.

Write for Bulletin No. 120

NIAGARA BLOWER COMPANY

Dept. EN, 405 Lexington Ave., New York 17, N. Y.

If you write maker identify as **IEN - 301**

USEFUL INFORMATION

(Continued)

If you write maker identify as **IEN - 303**

CHEMICALS . . Aldehydes to metallic salts are covered by booklet on synthetic organic chemicals

Carbide & Carbon Chemicals Co.
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

1954 Edition of Booklet F-6136 is a 20-page compilation of data on physical properties of some 330 synthetic organic chemicals. Included are 36 new chemicals. Products are arranged by family groups such as alcohols, glycols, acetals, ethers, plasticizers, ketones, acids, nitrogen compounds, aldehydes, surface-active agents, Ucon fluids and lubricants.

If you write maker identify as **IEN - 304**

CLEANING . . Recommended procedures for maintenance cleaning operations in a power plant

Oakite Products Inc.
116-A Rector St., Dept. IEN, New York 6, N. Y.

Cleaning and descaling heat-exchange equipment, removing carbonized oil from copper cooling oils, stripping paint, cleaning floors and painted walls are some of the operations described in new 44-page pocket booklet available on letterhead request. Title is "How to Make Power Plant Cleaning Easier." Materials and recommended procedures are given.

If you write maker identify as **IEN - 305**

ELECTRIC CONDUCTORS . . Aluminum wire for power and lighting use, details in 32-page bulletin

United States Rubber Co.
1230 Sixth Ave., New York 20, N. Y.

Performance of aluminum is stressed in new Bulletin W-53-1 on aluminum power and lighting wire and cable. Test results, properties, weight, current capacity, stripping and soldering procedures are given. You may be interested in the set of 14 questions and answers dealing with aluminum conductors.

If you write maker identify as **IEN - 306**

FLOW CONTROL . . Suggested circuits to apply air flow and liquid level sensing element

Fenwal Inc.
218 Pleasant St., Dept. IEN, Ashland, Mass.

Detect-A-Flow element employs a constant heat source and a thermostat to detect change in heat level. This change can be read in terms of air flow or liquid level. The company has prepared a 16-page loose-leaf bulletin, "Detect-A-Flow Control," to suggest applications and tell how to use it. Circuit diagrams form part of this information.

If you write maker identify as **IEN - 307**

PROCESS CONTROLS . . Technical data sheets on capacitance measurement of process variables

Foxboro Co.
42 Neponset Ave., Foxboro, Mass.

"Problem" variables difficult to measure by conventional means are the subject of new series of technical information sheets issued at intervals. They are based on industrial use of the company's Capacity Dynalog instruments to apply capacitance and a resonant circuit to such problems as measuring level of corrosive fluids. Your name will be added to the list upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 308**

A PAID NEWS ADVERTISEMENT BY WEST DISINFECTING CO.

WASHROOM towel dispenser reduces towel costs up to 40%

Westroll Towels in Micromatic Towel Dispensers reduce towel waste to an absolute minimum. Their design takes human nature into account. People will take just enough toweling and no more when they have to crank it out by hand. Tests show Westroll users average only 17 inches of paper, against 22, 33 or even 44 inches of interfold or flat towels. Users can crank out exactly the amount of towel necessary; as little as two inches for the removal of women's lipstick, for example.

There are also savings in maintenance. One filling of the Westroll Cabinet is equivalent to four fillings of ordinary flat towel dispensers. Here's an immediate saving in costly janitors' time. The Westroll dispenser has relatively few working parts; its maintenance is negligible. Westroll dispensers are loaned and maintained by West. They are easy to keep clean and help keep washrooms spic and span and free from excess litter.

Westroll paper towels, made especially for these cabinets, are of uniform high quality. Tested and retested during manufacture, they are exceptionally strong and absorbent. Packed 16 rolls to the case, each case contains sufficient toweling for approximately 10,000 single sheet drying.

Write for folder and more information. West Disinfecting Company, Dept. 13, 42-16 West St., Long Island City 1, N. Y.

If you write maker identify as **IEN - 309**

When Induction Hardening Replaced Carburizing

REJECTS ELIMINATED

A LEADING AIRCRAFT BUILDER had a high reject rate while carburizing hydraulic control valves. In addition, production was slow. Rework after rework was necessary because material was brittle and straightening was difficult, if not impossible. Depth of carburization was also hard to control . . . and it was a dirty job, too!

Picture changed overnight — Now, with Allis-Chalmers induction heaters rejects or reworks are eliminated; depth of hardening is held between .078 inches and .080 inches; production is greatly increased; and it's a clean, pushbutton type job.

Where there's a problem with warpage, scaling, or heat control, even a relatively low production item can often be profitably processed using induction heat.

Bring your problems to Allis-Chalmers. Call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4170

ALLIS-CHALMERS

If you write maker identify as **IEN - 310**

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.

224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as **IEN - 311**

- ★ **You SAVE 50% in tank SPACE**
- ★ **You SAVE up to 50% in initial COST**
- ★ **You have 50% LESS WEIGHT to handle**
- ★ **You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution**

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL A Division **Tranter Mfg. Inc.** LANSING 4, MICHIGAN

If you write maker identify as **IEN - 312**

If you write maker identify as **IEN - 313**

If you write maker identify as **IEN - 314**

USEFUL INFORMATION

(Continued)

If you write maker identify as **IEN - 315**

DRIVES . . Automatic control methods for variable speed drives are described in bulletin

Reeves Pulley Co.
800 N. Wilson St., Columbus, Ind.

Four methods of controlling machine tension, three methods for control of velocity and peripheral speed, three for synchronizing one or more machines, are covered in new 24-page Bulletin G-537, "Join the Swing to Automation." The bulletin then shows eight automatic controls for its variable-speed drive applied to automatic process control.

If you write maker identify as **IEN - 316**

ELECTRONIC PRODUCTS . . Data booklet gives engineering tables and nomograms on waveguides

Airtron Inc.
103 E. Elizabeth Ave., Dept. IEN, Linden, N. J.

Engineering data and curves employed in the company's own work have been published in the form of a 24-page booklet, "Microwave Nomograms and Charts." A copy will be sent you on request. Included are dimensions and tolerances for rigid and flexible rectangular waveguides, power ratings, attenuation, operating ranges, conversion nomograms.

If you write maker identify as **IEN - 317**

ELECTRONIC PRODUCTS . . Handbook of components to assemble like building blocks into a desired part

Alden Products Co.
117 N. Main St., Dept. IEN, Brockton 64, Mass.

1954 Edition of the company's handbook is a publication of about 150 pages entitled "Ideas — Techniques — Designs." It presents specifications, drawings, application ideas on a line of components for electronic and electric use. The handbook will be sent on letterhead request to qualified individuals.

If you write maker identify as **IEN - 318**

EXTINGUISHING . . Report of fire tests using dry chemical equipment on natural gas flames

Ansul Chemical Co.
Foot of Stanton St., Dept. IEN, Marinette, Wis.

Series of tests conducted recently on suitability of dry-chemical equipment to extinguish natural-gas fires are reported in 8-page Technical Bulletin 32. These tests were made on a 24-in. gas transmission line. You may be interested to see the "action" pictures and to look over the conclusions.

If you write maker identify as **IEN - 319**

HARDBOARD . . Cardboard slide selector on how to cut hardboard sheets most economically

Masonite Corporation
111 W. Washington St., Dept. IEN, Chicago 2, Ill.

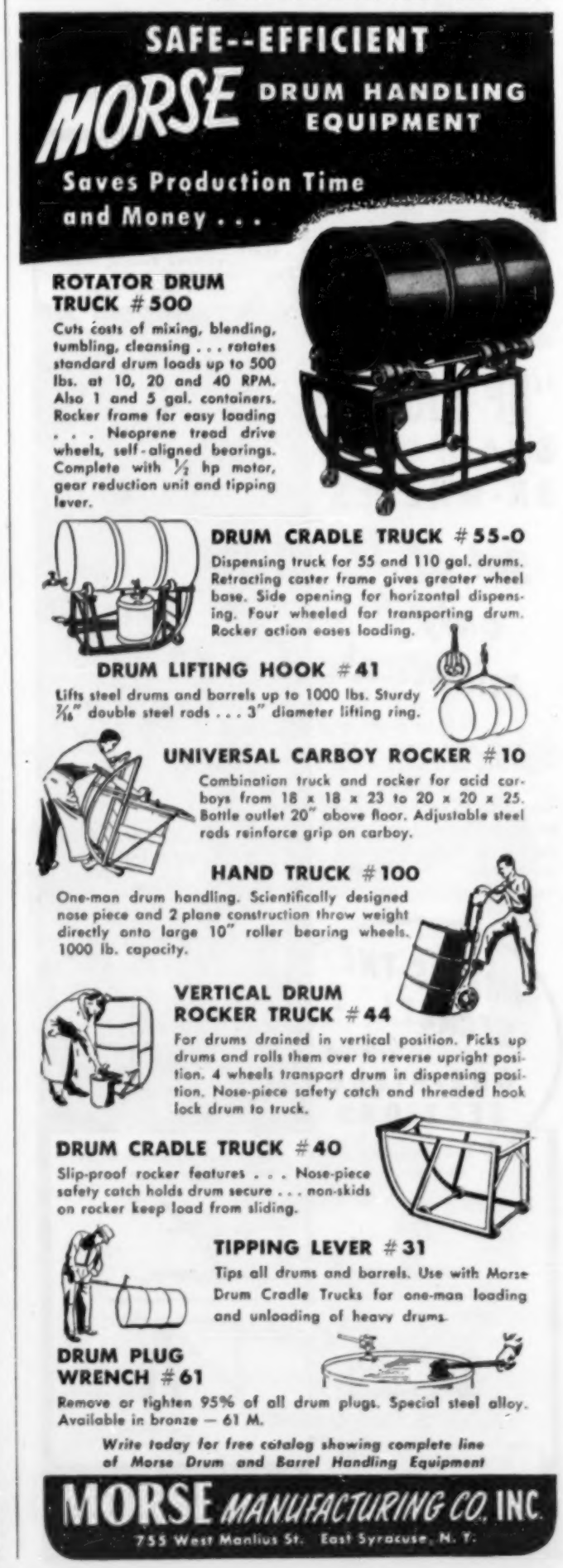
"Cutting Chart" is new 3 by 8½-inch slide selector to assist users of the company's Masonite Presdwood hardboard. Width or length of a desired piece size is set at the first of three windows. The second window reads pieces cut and percentage used against width from 1 to 4 feet. The third window reads against length from 5 to 16 feet. Piece size can be set in ½-in. steps from 1 to 30 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 320**

If you write maker identify as **IEN - 321**

If you write maker identify as **IEN - 322**



If you write maker identify as IEN - 324

Dust Respirators

LIGHTWEIGHT, COMFORTABLE, THRIFTY!

These economical, lightweight (1½ oz.) AO dust respirators are simply designed, easy to breathe in, offer unobstructed visibility, are easily cleaned. They are the lowest priced respirators approved by the Bureau of Mines! The R9100 protects against pneumoconiosis-producing and nuisance dusts — borax, carbon, glass, grain, graphite, cement, limestone, gypsum, coke, etc. Companion model R9100T protects against toxic dusts not considerably more toxic than lead — arsenate of lead, cadmium, manganese, DDT. Your nearest AO Safety Products Representative can supply you.

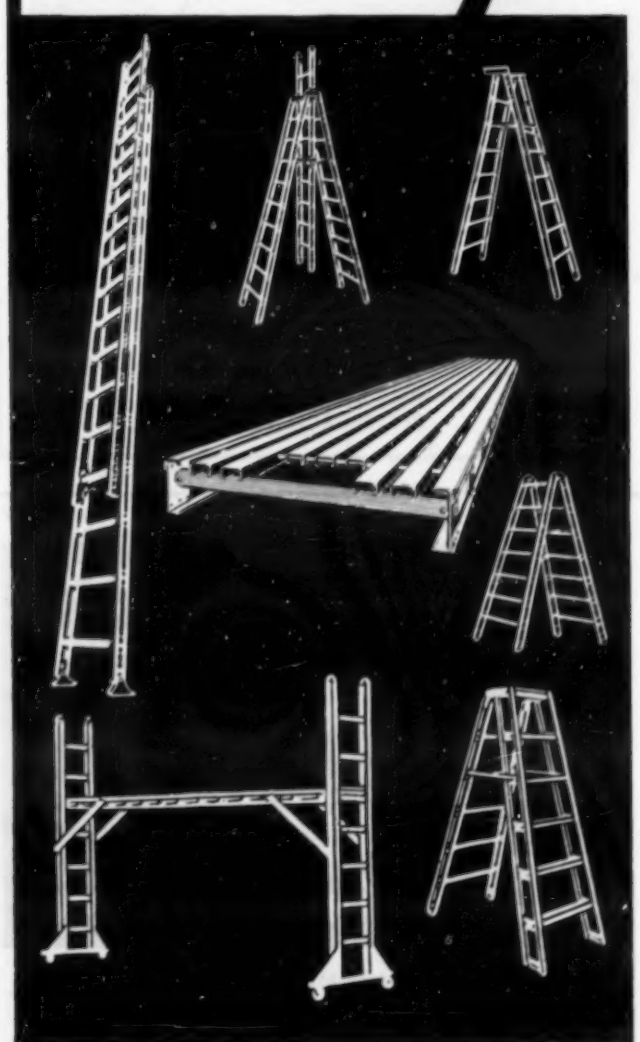
American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

If you write maker identify as IEN - 325

ALUMINUM
LOUISVILLE
LADDERS

The maintenance departments' choice for rugged, durable equipment . . . and there's safety in Louisville patented construction. Rungs are reinforced and securely riveted to the side rails . . . the most effective way to prevent rung turning and loosening . . . facts proven every day in all types and sizes of plants throughout the country.



The complete line of standard ladder products. Try Safe-Weight . . .

- Extruded aluminum side rails
- Large diameter corrugated aluminum rungs
- Reinforced rung assemblies
- Riveted Construction
- Complete accessories

Your assurance of quality, heavy duty equipment.

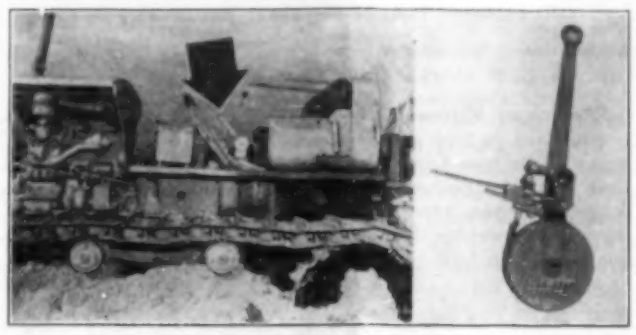
AVAILABLE THROUGH BETTER DEALERS

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 11 — Louisville 10, Ky.

If you write maker identify as IEN - 327

CONTROL . . Brake controlled lever holds engine throttle in set position

Source: LINK-BELT SPEEDER CORP.
1203 Sixth St. S. W., Cedar Rapids, Iowa



Does not require holding

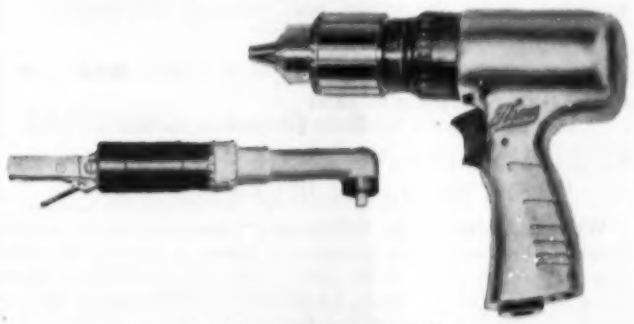
Throttle Control designates a new brake equipped lever for application on engine driven equipment subject to vibration. The brake drum on which the lever pivots provides a means for mounting the unit with the drum in stationary position. The engine throttle or governor is connected by rod or cable to the bell crank on the lever.

A spring establishes initial tension to hold the brake band with which the lever is equipped against the brake drum and so sets up frictional resistance to movement sufficient to resist throttle or governor pull to 75 pounds. Application can be made in any position. Moving parts on the new control are either aluminum or cadmium plated to resist corrosion.

If you write maker identify as IEN - 328

DRILLING . . Pneumatic tools are convertible for nut setting

Source: THOR POWER TOOL CO.
175 N. State St., Dept. IEN, Aurora, Ill.



Details in Catalog JE-1690

Three new series of pneumatic tools have been added to the company's line to cover drilling and nut setting operations in a range between ¼ and ¾ inches. Series-3 drill, shown to the right in the illustration, employs a basic No. 3 air motor to drive four straight drills, four right angle drills and four right angle nut setters. Speeds range from 3,400 to 800 rpm. Capacities are ¼, 5/16 and ⅜ inch.

Series 35 includes three grip handle drills in speeds of 1,150, 800 and 550 rpm. with capacities of ⅜ and 7/16 inch. The drills are convertible to direct nut drivers with 5/16-in. thread capacity. Series 5, shown to the left in the illustration, is a right angle nut setter available in four speeds, between 600 and 225 rpm., to set nuts measuring ½ to ¾ inch.

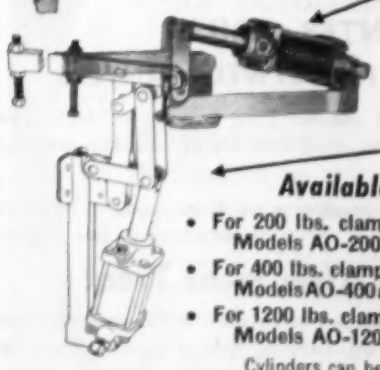
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 329

HAVE YOU HEARD ABOUT AIR-OPERATED TOGGLE CLAMPS to step up your clamping operations?

Knu-Vise (AODT-400)
Double-toggle Clamp to clamp "around the corner"

Knu-Vise (AO-400)
Toggle Clamp for conventional clamping.



In cases where the cylinder interferes with conventional clamping, the Double-Toggle Clamp shown at the top serves such difficult mounting situations as illustrated in the superimposed line drawing.

Available in 3 series

- For 200 lbs. clamping force
  Models AO-200 and AODT-200
- For 400 lbs. clamping force
  Models AO-400 and AODT-400 (illustrated)
- For 1200 lbs. clamping force
  Models AO-1200 and AODT-1200

Cylinders can be easily rotated to suit air supply from either left or right side.

Send for complete information.

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN

WESTERN DIVISION — 422 MAGNOLIA • GLENDALE, CALIF.
CANADIAN DIV. — HIGGINSON ENGR. • HAMILTON, ONT.

If you write maker identify as IEN - 330

BE FRESH . . . STAY FRESH

wear a **DUPOR Automatic Water-cooled Respirator**

For years a prime favorite of respirator users. Sponge filter saturated in water provides moist air—cool, comfortable breathing. Keeps out dust, fumes, smoke, paint spray. Face mask is of soft white rubber. Maximum visibility. Automatic valve exhausts breathed air instantly. Wear while paint spraying, or as protection against gases, dusts, smoke, fumes.

Sample sent $2.00 - pp

H. S. COVER
South Bend, Ind.

If you write maker identify as IEN - 331

16" PRECISION DRILLING MACHINE

- Variable speed spindle drive, 600-4000 RPM without shifting belts
- Back gears for reaming, etc., 150-1000 RPM
- Clamp type depth stop for rapid adjustment
- Screw type vernier for fine depth adjustment
- Spindle runout at 2 inch extension from socket .001", from chuck .0025"
- Work light
- Table square to spindle .005" at 6" radius
- Rigid 3½" diameter column

600 to 4000 RPM Model, $290. f.o.b. Milwaukee, Wis., complete with motor, work light and cord.

THE ELECTRO-MECHANO CO.
269 E. ERIE STREET MILWAUKEE, WIS.

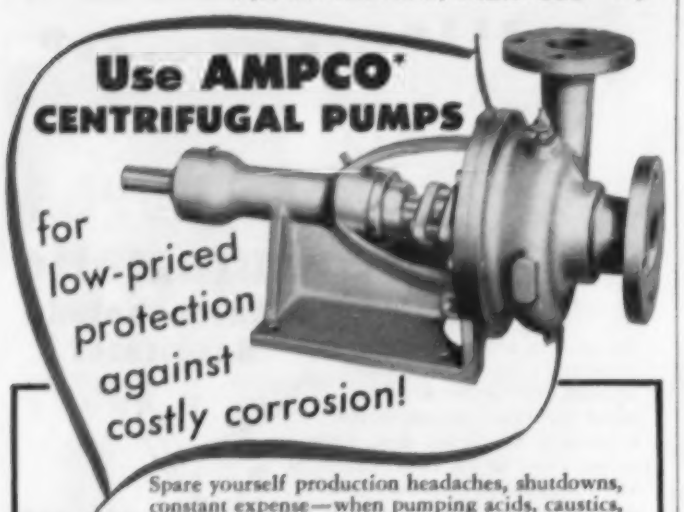
If you write maker identify as IEN - 332

making "cobra coils" out of stainless tubing?

Probably your fabricating problem is not so complex — but whatever it is — here's the "charm" to make it easy. It's the new Carpenter Bending and Coiling slide chart for Stainless Tubing and Pipe. Send for it today.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

If you write maker identify as **IEN - 333**



Spare yourself production headaches, shutdowns, constant expense—when pumping acids, caustics, and other corrosives. Use Ampco Centrifugal Pumps, the corrosion-resistant pumps that sell at standard-pump prices.

These money-saving units are fabricated throughout of the proper combination of Ampco aluminum bronzes. That's why they have exceptional resistance to corrosion, as well as deformation, cavitation erosion, and wear from abrasive solids in suspension.

You find Ampco Pumps performing dependably and efficiently wherever there's a tough pumping job. They handle hot sulfuric acid, hydrofluoric acid, fatty acids, dyestuffs, caustics, polluted harbor water, and most other corrosive liquids. Available in sizes from fractional flow to 600 gpm — pedestal or close-coupled mounting. Write for more information today.

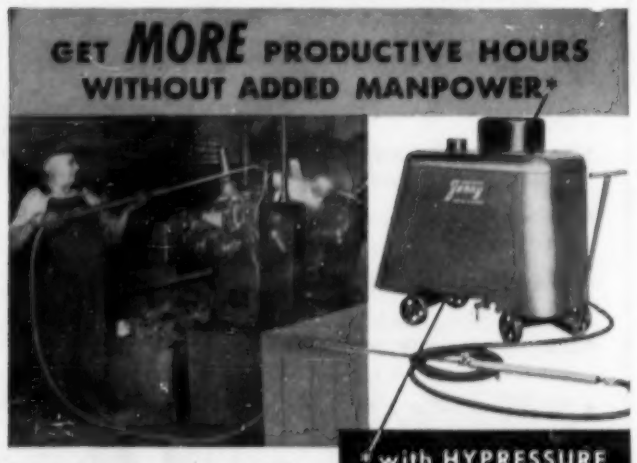
*Reg. U. S. Pat. Off.

AMPCO

Ampco Metal, Inc.
Dept. IE-1, Milwaukee 46, Wisconsin
West Coast Plant • Burbank, California

P-7

If you write maker identify as **IEN - 334**



One man, using HYPRESSURE JENNY, can do more cleaning in a single hour than 10 men can accomplish in the same time by outmoded hand cleaning methods.

JENNY cleans anything—*anywhere*—machinery . . . tools . . . walls . . . floors . . . skylights . . . trucks . . . tank cars . . . and processing equipment of every description, in factories, mills, food plants, garages, repair shops, and on the farm. JENNY hates grease, muck and dirt—cleans right "down-to-the-bone." Saves up to 40% of mechanics' time, usually lost fighting dirt and grease on repair work.

Keeping house with JENNY pays valuable dividends in stepped-up production, fewer lost-time accidents, lower fire insurance premiums and increased personnel efficiency.

HYPRESSURE JENNY DIVISION
Homestead Valve Manufacturing Company
"Serving Since 1892"
P. O. BOX 85 CORAOPOLIS, PA.

Write today for information packed booklet "1001 WAYS TO EXTRA PROFITS with HYPRESSURE JENNY STEAM CLEANER." It's yours FREE, and without obligation.

If you write maker identify as **IEN - 335**

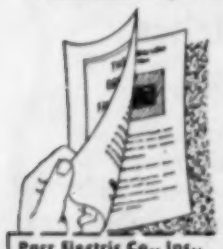
The BRUNT FAULTFINDER
prevents production shutdowns due to grounds

You can find a ground in an energized power circuit in a few minutes with a Brunt Faultfinder. It's a one-man job—no pulling of switches—no interference with production. Widely used by country's largest manufacturers.

PRINCIPAL FEATURES

- Can be used in dark or noisy locations.
- Locates faults on ungrounded wiring systems up to 550 volts, a.c. or d.c.
- Imposes only 2 amperes on circuit.
- Traces pole line signals without climbing.
- Combination ground detector and fault locator.
- Equally strong signal on open or enclosed wiring.
- No delicate meters or instruments to adjust.
- Small, compact, durable, easy to operate.
- Phase indicator lights visible at a distance.

PRICE $450. Express Prepaid



Order today as insurance against costly shutdowns.

Parr ELECTRIC CO. INC — NEWARK, NEW JERSEY

Send for this booklet

Parr Electric Co., Inc., 40 Austin St., Newark 5, N. J. A
Send me your booklet "The Brunt Faultfinder"
NAME..... POSITION.....
COMPANY.....
ADDRESS.....

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 336**

MANAGEMENT . . Employee education book tells economic facts of life about this country

Middle West Service Co.
18-22 N. Wacker Drive, Chicago 6, Ill.

"American Economic System" titles new 96-page paper-bound book to help set employees straight on economic matters. It tells how Americans started out to make a living, how they won the highest standard of living, comparison with other countries, how Americans share the national income, why the American system works well, what our American goals are and how to reach them. Individual copies are $1.

If you write maker identify as **IEN - 337**

MOTORS . . Chart of NEMA dimensions compares old and new figures for ac. frame sizes

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Pittsburgh 30, Pa.

Blue figures are given for "old", red figures for "new" NEMA standard dimensions for ac. motors from 1 to 30 hp. in new 18 by 24-in. wall chart DC-463. This information covers polyphase squirrel-cage motors, polyphase wound-rotor motors, single-phase motors, flange-mounted motors. Also tabulated are hp. ratings at speeds from 600 to 3,600 rpm.

If you write maker identify as **IEN - 338**

PACKAGING . . How paper sacks are made is described in new 46-page loose leaf picture bulletin

Hudson Pulp & Paper Corp.
505 Park Ave., Dept. IEN, New York 22, N. Y.

Operation of the company's new mill at Palatka, Florida, is described by some 100 captioned pictures in new bulletin available on request. It starts with planting of seedlings for forest growth, continues with logging, preparation of wood into pulp, manufacture of pulp into paper, production of multiwall sacks. Inspection, test, research are stressed.

If you write maker identify as **IEN - 339**

PAINTING . . Application chart lists paint to use for some 30 types of surface

Tropical Paint & Oil Co.
1246 W. 70th St., Dept. IEN, Cleveland 2, Ohio

What paint to use on brick, stone, concrete, wood, metal, plaster, glass and other surfaces is listed in tabular form by new Industrial Paint Index chart. The 11¾ by 18⅝-in. chart folds to file size. It covers 70 products, tells whether to use inside or outside, type of finish.

If you write maker identify as **IEN - 340**

O-RING SEALS . . Engineering data book of 82 pages on O-rings, Quad rings, rubber packings

Minnesota Rubber & Gasket Co.
3630 Wooddale Ave., Dept. IEN, Minneapolis 16, Minn.

Drawings of suggested installation methods, effect of pressure or groove design on O-ring performance, standard sizes of O-rings and dimensional data on their installation are given in new 82-page "O-Ring Catalog." List price is $4. The catalog also presents information on the company's Quad Rings for similar application, on U-cups and V-rings, compounds and their specifications, manufacturing processes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 341**

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

USE "RING SEAT"
CENTER DRILLS
IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES
13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as **IEN - 342**

Easy to use . . . Easy to clean . . . Easy to service

DERBY SEALER — **MODEL 32 GUMMED TAPE DISPENSER**

For Shipping Room and Production Line Packaging

- Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months when machines tend to "gum-up."
- The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.
- Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.
- Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

For further information, write Dept. IF

DERBY SEALERS, INC.
Derby, Connecticut

If you write maker identify as **IEN - 343**

It's all in the Heat Treatment

Tough heads eliminate spalling.

Special Hammers not required to make stamps safe.

Originators of Super Safe and Safaloy Stamps

WRITE FOR INFORMATION AND PRICES

We specialize in rugged stamps for steel mill use.

Our roll cutter tools outlast all others.

PITTSBURGH STENCIL & TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as **IEN - 344**

NOW AUTOMATIC Hole DEBURRING

with NOBURMATIC TOOL

New Noburmatics deburr and chamfer front and inaccessible back hole faces in ferrous and non-ferrous sheets, plates, extrusions, castings and forgings ***in one automatic operation***. Used in drill motors or stationary machine tools, Noburmatics produce uniform deburring with high accuracy, increase production line speed. Made in all drill sizes from 1/8" (.125) to F(.256).

Entry Noburmatic enters hole, advances to limit stop. DEBURRS FRONT FACE. (Rear cutter now projects.)

Withdrawal BACK FACE DEBURRED. Cutter automatically retracts. Tool ready for next cycle.

For Free Bulletin and Full Details, Write Today!

NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

If you write maker identify as IEN - 345

Can your present casters pass this test?

Try it yourself.

Filing action fails to bite uniformly hard (15N90 Rockwell) bearing raceway surfaces which are hardened *all over*. If file bites into the metal, you're not getting the kind of construction and service that gives you the most for your money.

Bassick cold-formed series "99" casters pass this test easily — their *full case-hardened* swivel bearing surfaces are "file-hard". Call your Bassick industrial distributor and let him prove it to you. Or write us for more facts. THE BASSICK COMPANY, Bridgeport 2, Conn., *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

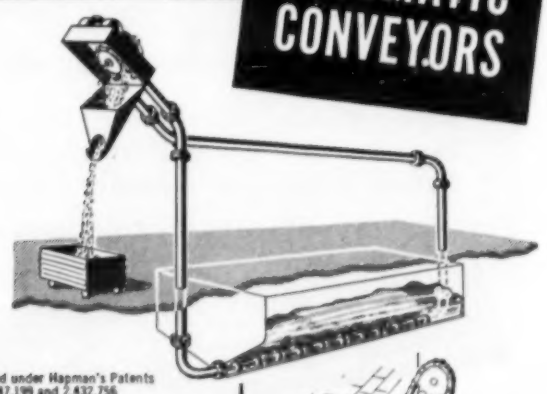
75 YEARS OF CASTER LEADERSHIP

If you write maker identify as IEN - 346

Get automatic LOW COST handling of loose materials

such as:
METAL WORKING CHIPS • DUST • SCALE • CRACKLINGS • POWDERS • ETC. *with*

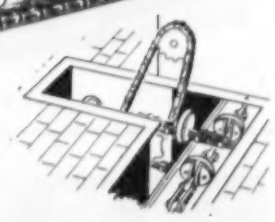
HOUDAILLE AUTOMATIC CONVEYORS



Licensed under Hapman's Patents No. 2,147,199 and 2,432,756

Houdaille Chain Drag Conveyors

Completely enclosed flights and chain automatically collect, transport and discharge chips, sludge, scale and other types of solid or fibrous material which settle to the bottom of tanks or hoppers. System eliminates manual handling methods, conserves manpower and requires little or no maintenance. Available in standard pipe sizes of 3", 4", 6" or 8". Larger sizes available on request. Choice of chains, flights, casings, accessories available, depending on application.



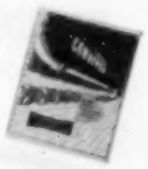
Houdaille Open Trough Chain Conveyors

Chain Drag Conveyors, installed in open troughs, offer advantages in many operations. Below-floor-level installation, illustrated, removes chips from machine tools, keeps system from interfering with heavy traffic plant areas . . . offers access to chain and flights at any point of circuit.

See Honan-Crane Equipment in Operation
at the
PLANT MAINTENANCE SHOW
Chicago—January 25, 26, 27, 28—Booths 1233-35

NEW Comprehensive Catalog . . .

with complete information on all Houdaille conveyors now available. Write today on company letterhead to . . .



Honan-Crane Corp.
802 Wabash Ave., Lebanon, Ind., *a subsidiary of*
Houdaille-Hershey Corporation

WORLD'S LEADING OIL-FILTER MANUFACTURER

In Canada: E. W. PLAYFORD, LTD., Montreal 28
W. E. MICKLETHWAITE, Toronto 18

If you write maker identify as IEN - 348

TRAP . . Ball float assembly 330 lb., 800 deg. F., stainless steel

Source: V. D. ANDERSON COMPANY
1931 W. 96th St., Cleveland 2, Ohio

Corrosion proof

Liquid that enters this new stainless steel trap through its top connection raises the internal float, opens the valve and escapes through the bottom. Accumulation of steam or gas lowers the liquid level, moving the float down with it, so the valve closes. The action is continuous, without permitting escape of air or gas, to keep liquid out of the line on which the trap is assembled.

Applications are in connection with corrosive liquids in air, gas or steam. The trap parts, including the body, are made of stainless steel. Sizes range from ½ to 2-in. pipe connection. Pressure is to 300 lb. and temperature to 800 deg. F.

If you write maker identify as IEN - 349

CLEANING . . Non-flammable solvents for fire safe use on metal parts

Source: PENETONE COMPANY
Box 154, Tenafly, N. J.

Minimizes fire danger

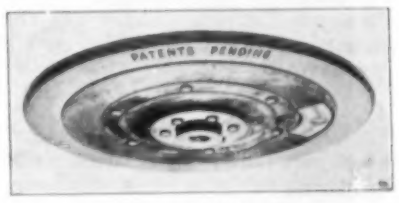
Navee '53 and **Hi-Flash** are two new solvent emulsion cleaning liquids. Both have a flash point of 250 deg. F. Navee '53 removes hardened oxidized and burned-on oils and grease as well as carbon stains, preservative coatings, lead oxide, asphalt tar, resins, ink. It mixes with 5 to 10 parts of water.

Hi-Flash removes drawing, cutting and lubricating oils, buffing and polishing rouges. It can be employed concentrated or mixed with water, heated or left at room temperature.

If you write maker identify as IEN - 350

SANDING . . Leather back-up pad for disc machines, flexible, resilient

Source: ALEXANDER BROTHERS BELTING CO.
406 N. 3rd St., Dept. IEN, Philadelphia 23, Pa.



Ask for special bulletin

Multi-Flex designates a new balanced leather pad with mounting on a metal plate for application on the spindle of a disc sanding machine. The fiber structure of the leather withstands constant flexing, without breaking down or loss of elasticity, for a considerable period of service. Large pads can be used until they require replacing and then can be cut down to smaller sizes. Only the pad itself requires replacement. The metal plate and hub do not wear out. The company is prepared to supply the pad in a range of sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 351

DELAVAN SPRAY NOZZLES

TYPE WR SHOWN HERE IS EXCELLENT FOR . . .

- Cooling Towers
- Brine Sprays
- Degreasing
- Bonderizing

. . . and many other industrial uses.

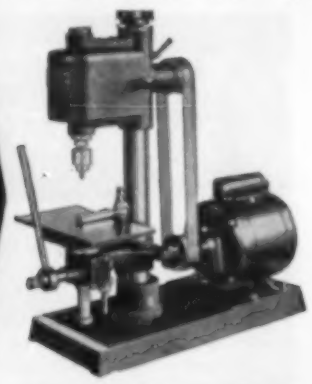
There is a DELAVAN nozzle for any spraying requirement.

Write now for Catalog 31

DELAVAN MANUFACTURING CO.
GRAND AVENUE AND FOURTH STREET
WEST DES MOINES, IOWA

If you write maker identify as IEN - 352

THIS TAPPING MACHINE IS UNIQUE IN THE FIELD OF SMALL HOLE PRECISION TAPPING



TAPPING CAPACITY
From the smallest and finest tap up to 10-32 inclusive.

SPINDLE SPEEDS
1200 to 2600 R.P.M.

CLEARANCE
Taps to the center of 6½"

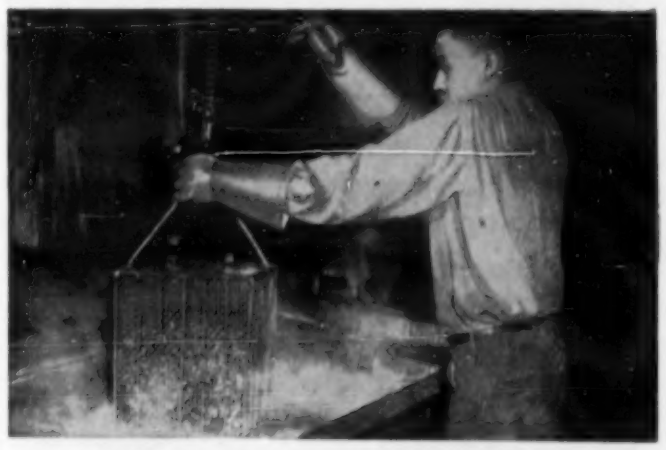
HAMILTON® TAPPING MACHINE SUPER SENSITIVE SUPER ACCURATE

- **Spindle idles in reverse. Changes direction of rotation automatically as pressure is applied to tap. Withdraws tap instantly and automatically when pressure is released.**

REDUCE TAP BREAKAGE REDUCE SCRAP WRITE FOR FREE BULLETIN T-5313.

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 353



Case No. 207: Handling sharp edged metal products in hot acid solutions. Correctly job-fitted gloves reduced hand injuries 78% and saved 6c per man-hour on glove replacement cost.

We fit the glove to the job . . .

Savings of 40% to 70% of glove costs to employees or management, and comparable reductions in hand injuries, are being effected by replacing old-type work gloves with Edmont coated gloves designed for the job condition. With the cooperation of America's largest industries we have developed and test-rated gloves for any combination of service requirements listed below. Tell us your operation. Without cost we will send test samples of the correct glove, and name of distributor who can supply you.

Edmont Case No. 208: Handling explosives in fibre cases. *Job-fitted* gloves, palm-coated with rough textured natural rubber, outwore leather palm gloves 3 to 1 and gave positive non-slip grip at all times.

Edmont Case No. 419: Chemical company working in acids and strong solvents. *Job-fitted* gloves coated with NEOX (specially reinforced neoprene) outwore rubber coated gloves more than 4 to 1.

Edmont Case No. 272: Handling thin strips of stainless steel. *Job-fitted* gloves, palm-coated with cut-resisting reinforced neoprene, wore 8 times longer than canvas gloves (224 hours vs. 28 hours) with comparably greater protection.

Abrasion Resistance
Cutting Resistance
Snagging Resistance
Flexibility
Wet Grip
Dry Grip

Acids:
Sulphuric—98%
Sulphuric—10%
Nitric—70%
Nitric—10%
Hydrochloric—38%
Hydrochloric—10%
Chromic

Solvents:
Turpentine
Stoddard Solvent
White Gasoline
Benzol
Cutting Oil
Acetone
Methyl Ethyl Ketone
Kerosene
Lacquer Thinner

Caustics:
Potassium Hydroxide—50%
Sodium Hydroxide—50%
Lye
Trisodium Phosphate

Degreasants:
Trichlor-ethylene
Carbon-tetrachloride

We make 34 types of coated industrial gloves. Complete catalog on request. Address Edmont Manufacturing Co., 1226 Walnut Street, Coshocton, Ohio.

Edmont job-fitted gloves
Largest selling line. Supplied by leading industrial distributors

If you write maker identify as IEN - 355

SATISFACTION GUARANTEED and YOUR MONEY BACK

Faster, neater bagging . . . at lower cost . . . pays you many times the price of this easy-to-use bagger. Blower opens bag; your operator fills and removes it in one swift motion. Adjustable for bags from 2¼ to 5 inches wide and 5¼ to 7½ inches high. Glad to quote for other sizes or cellophane.

TRIAL OFFER

Use this bagger a full week. Be 100% satisfied or return it for refund.

Just send samples of your bags and ask for Bulletin 1-29

Anderson Bagger

$65 complete, f. o. b. Rockford

Anderson

ANDERSON BROS. MFG. CO.
ROCKFORD, ILLINOIS

If you write maker identify as IEN - 356

SEE HOW General CAN CUT YOUR PACKAGING AND SHIPPING COSTS . . .

SEND FOR FREE BOOKLET

General Box COMPANY
1815 Miner Street
Des Plaines, Illinois

Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

If you write maker identify as IEN - 357

REDUCE COSTS ON "SMALL-WORK" GRINDING & FINISHING JOBS with

Foredom FLEXIBLE SHAFT MACHINES

- FEATHER-WEIGHT finger-tip-controlled handpiece (pencil size or larger) which eliminates operator fatigue.
- CHOICE OF 5 HANDPIECE TYPES (all instantly interchangeable). You fit the handpiece to the job at hand.
- EXTRA GOOD FLEXING QUALITIES in the flexible shaft assembly for effortless maneuverability.
- LONGER MOTOR LIFE because motor is not dwarfed to fit the hand.
- HIGH SPEED (14,000 RPM) which does not drop precipitately under load.
- SILENCER EQUIPPED flexible shaft for vibration-free performance.

Over 100,000 FOREDOMS now in use!

BENCH OR HANG UP MODELS FOR HEAVY OR LIGHT DUTY

Also flexible shaft tools attachable to your own drill press or motor

Use Foredoms to GRIND, POLISH, DRILL, ROUT, CARVE, MILL, SAW, SLOT, CLEAN, SAND, ETCH, ENGRAVE, etc., etc.

Write for Catalog 4167

FOREDOM Electric Co., Dept. 4167, 27 Park Place, N. Y. 7

USEFUL INFORMATION
(*Concluded*)

If you write maker identify as IEN - 358

SHEARING . . Instruction booklet on setting up and operating company's machines

O'Neil-Irwin Mfg. Co.
547 Eighth Ave., Lake City, Minn.

Four hand models and four power models of the company's Di-Acro shearing machine are covered by new 16-page Booklet D-81. It summarizes specifications and capacities, tells how to assemble the machines, gives operating instructions, shows standard equipment, notes adjustments that can be made. There is a suggested procedure to set up for a run.

If you write maker identify as IEN - 359

TESTING . . Pocket data card to correct hardness readings on curved surfaces

American Chain & Cable Co.
927-31 Connecticut Ave., Bridgeport 2, Conn.

Pocket-size plastic card, 2½ by 5¼ in., gives corrections to be added to observed Rockwell hardness numbers on cylindrical surfaces. These corrections enable you to compare the cylindrical hardness value with that of the same material tested flat. The correction numbers are for Rockwell machines with C, D, A scales, B, F, G scales, and for superficial testers with 15N, 30N, 45N and 15T, 20T, 45T scales.

If you write maker identify as IEN - 360

VALVES . . Tables of service suggestions in house publication article on diaphragm valves

Crane Company
834-38 S. Michigan Ave., Chicago 5, Ill.

Body, disc and diaphragm materials are listed in the first of six tables in an article in Valve World No. 3, 1953. The other five tables list service suggestions on the company's line of diaphragm valves for materials from Acetate Solvents to Zinc Sulfate. The article is written by J. Trefil of the company's valve and fitting Engineering Department.

If you write maker identify as IEN - 361

WATER TREATING . . How demineralizing works and how it is used industrially is described in bulletin

Cochrane Corp.
3132 N. 17th St., Philadelphia 32, Pa.

"Handbook on Demineralizing" is new 40-page bulletin that tells how demineralizing water by ion exchange is accomplished. A color-coded schematic diagram shows the steps involved. Types of treatment possible, equipment and its operation, application examples in a number of industries, are among the topics.

If you write maker identify as IEN - 362

WELDING . . Stranded electrodes for inert-gas-shielded arc welding described in reprint

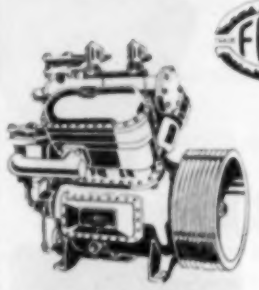
Air Reduction Sales Co.
1656 Lincoln Bldg., New York 17, N. Y.

Desired composition of small-diameter wires for the Aircomatic welding process is achieved by a composite electrode employing strands of individual metals. How this is done is described in 12-page technical reprint, "Stranded Electrode Materials." The method makes it possible to apply alloys that cannot be drawn into small-diameter continuous lengths.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 363

Pilotless Bombers Made With FRICK Air Conditioning



Frick "ECLIPSE" Compressors Handle Air Conditioning Work with Extra Economy: ask for details.

The Glenn L. Martin Company, builders of "Matador" bombers, "404" transports, and other famous planes, uses 27 Frick compressors for air conditioning and special cooling services in its great plant at Middle River, Md. These machines have been installed over a period of 16 years by the Paul J. Vincent Co., Frick Distributors in Baltimore.

For the last word in dependability and convenience, specify Frick air conditioning, refrigerating, ice making and quick freezing equipment. Let us quote on your cooling needs NOW.

DEPENDABLE REFRIGERATION SINCE 1882
FRICK CO.
WAYNESBORO, PENNA. U.S.A.

Also Builders of Power Farming and Sawmill Machinery

If you write maker identify as IEN - 364

NEW Aerovent Vaneaxial FANS

for peak efficiency and economy in all higher static pressure ranges

Designed for maximum operating performance and low-cost, easy maintenance, Aerovent "Vaneaxial" Fans utilize specially constructed propellers and guide vanes to provide high-velocity, straight-line air delivery. Available in sizes 12" to 48" for capacities to 77000 CFM.

other models for every air-moving requirement

All Aerovent Fans are rated in accordance with the Standard Test Code and U.S.D.C. Comm. Std. CS178-51.

Ask for free folder V-50!

Aerovent Fan Company, Inc.
Ash and Brown Streets Piqua, Ohio

If you write maker identify as IEN - 365

NEW IDEAS . . . for glass part applications

- electronic components
- appliance parts
- instrument parts
- nameplates
- reflectors
- lenses
- dials
- many others

New, Richly Illustrated Catalog Includes 21 Case Histories Plus Other Valuable Design Data

Write for your free copy today . . .

THE Lancaster Lens Co.
Lancaster, Ohio
INDUSTRIAL GLASS MADE TO YOUR SPECIFICATIONS

If you write maker identify as IEN - 366

No More AIR LINE Maintenance due to internal condensation!

Do away with manual draining of your compressed air lines and get full protection for your plant equipment and tools. Positive action of these automatic units blasts out water and sludge with practically no pressure drop.

Designed for high efficiency in forcing condensation, these separators are full capacity in size and shape for the size lines they serve (there's a direct relationship). Units for every line size from ¼" to 2", also for tanks, sumps, compressors, aftercoolers, etc.... Manual drains also available.

There is a Wilkerson model for every possible set-up. Write for literature on your company letterhead.

USE WILKERSON Automatic MOISTURE SEPARATORS

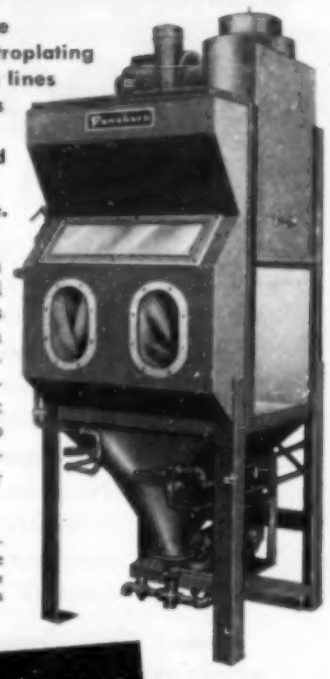
WILKERSON CORPORATION
3469 S. Platte R. Dr., ENGLEWOOD, COLO.

Service-distributors in most U. S. cities.

If you write maker identify as IEN - 367

Pangborn HYDRO-FINISH

- deburrs • removes scale
- prepares surfaces for electroplating
- removes, blends grinding lines
- finishes threaded sections for fit
- improves die making and maintenance
- improves cutting tool life.



PANGBORN Hydro-Finish does all these jobs and more! Fine mesh abrasives suspended in water give you a precision finish . . . hold tolerances to .0001". Vary abrasives, air pressures, work distances, ratio of liquid to abrasive and you can do almost any finishing job faster and better!

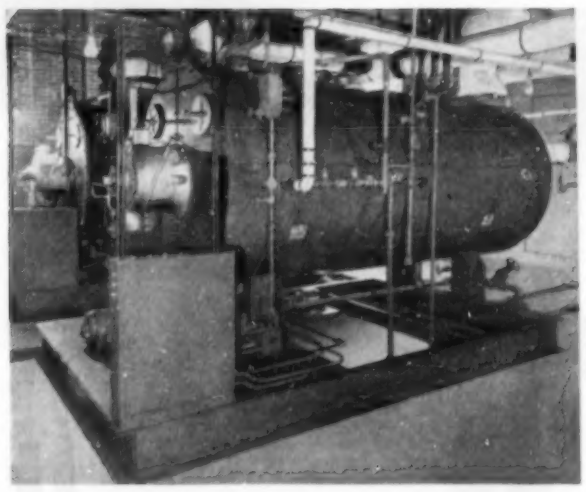
GET THE FACTS on how Hydro-Finish can save you money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn BLAST CLEANS CHEAPER

with the right equipment for every job

If you write maker identify as IEN - 368

Steam Costs Go DOWN where *Powermasters* Go In



For Example:

A textile plant cut steam costs 20% by replacing a coal-fired boiler with these two oil-fired *Powermaster* Packaged Automatic Boilers. Low-cost space-saving installation, completely automatic operation, higher quality steam, much less attention and maintenance, and smokeless combustion are advantages gained.

Have You Checked Your Steam Costs Lately?

Many kinds of industrial plants, food processors, schools, institutions, public buildings, laundries, housing projects, and utilities are also enjoying the cost-saving advantages of *Powermaster* boilers.

Send for New Bulletin

describing and illustrating all cost-saving advantages of *Powermaster* units.

O&S *Powermaster*®

PACKAGED AUTOMATIC BOILERS

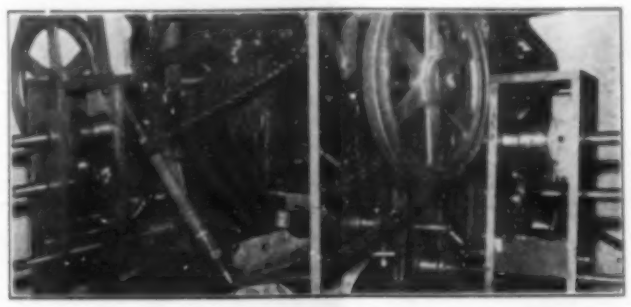
Sizes to 500 HP; pressures to 250 psi.

Orr & Sembower, Inc.
Morgantown Rd., Reading, Pa.

If you write maker identify as IEN - 370

PRESS TOOLS . . Strip stock feed is operated by Geneva index mechanism

Source: GENEVA MACHINE & TOOL CORP.
402 Ellamae St., Dept. IEN, Tampa 2, Fla.



Press stroke length is not a factor

The company announces development of a standardized Geneva feed drive for application on any standard punch press. It provides intermittent feed for strip stock during any predetermined fraction of the press stroke. It will feed a predetermined length of strip, depending upon the selected diameter of the feed rolls which the mechanism drives intermittently.

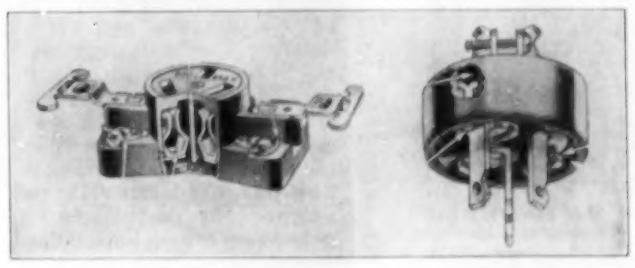
Connection is by means of a chain and sprocket on the press crankshaft, the chain traveling over an idler and down to the drive shaft on the mechanism. Output shafts connect to the upper and lower feed rolls that direct the strip material through the press.

The illustration shows application on a 7-ton press that has a 1¼-in. stroke. The strip is forwarded into the press tools during ¼ of the press stroke. The mechanism operates within a tolerance of 0.005 inch. It can be adjusted to hold within limits down to 0.001 inch.

If you write maker identify as IEN - 371

CONNECTOR . . Polarized receptacle and plug for 2, 3 and 4 wire circuits

Source: PASS & SEYMOUR INC.
1307 Milton Ave., Dept. IEN, Syracuse 9, N. Y.



Catalog "Polarized Electrical Devices"

The spring clips in this new receptacle are positioned, with reference to the center line, so it is not possible to enter the grounding blade in a current carrying position. The receptacle is made with a black Bakelite body, zinc plated steel back plate with a laminated Bakelite back cover, riveted terminals and No. 8 binding screws. Plaster ears are scored for quick removal when they are not needed.

The plug cap is made of steel with bright zinc plating. The body is Bakelite. A cord grip is integral with the cap. The blades are riveted in place. Ratings are 10, 15, 20 and 30 amperes. Fiber insulating discs are partly inserted on the plug so they can be removed for wiring.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 372

the most widely used Electronic Supply Guide

free

ALLIED'S COMPLETE 268-PAGE 1954 CATALOG Send for it

World's Largest Stocks of ELECTRONIC SUPPLIES FOR INDUSTRY

Simplify and speed your purchasing of electronic supplies and equipment. Send your orders to us for quick shipment from the world's largest stocks of special-purpose electron tubes, test instruments, audio equipment, electronic parts (transformers, capacitors, controls, etc.). Our expert Industrial supply service saves you time, effort and money. Send today for your Free ALLIED Catalog—the complete, up-to-date guide to the world's largest stocks of Electronic Supplies for Industrial use.

One complete dependable source for everything in electronics

ALLIED RADIO
100 N. Western Ave., Dept. 14-A-4
Chicago 80, Illinois

If you write maker identify as IEN - 373

New SOUTH BEND GRINDER

is built ruggedly to give long service under hard use. Motor inside pedestal drives through V-belt. No wheel weight on motor bearings. Shielded motor reduces wear and allows ample work clearance.

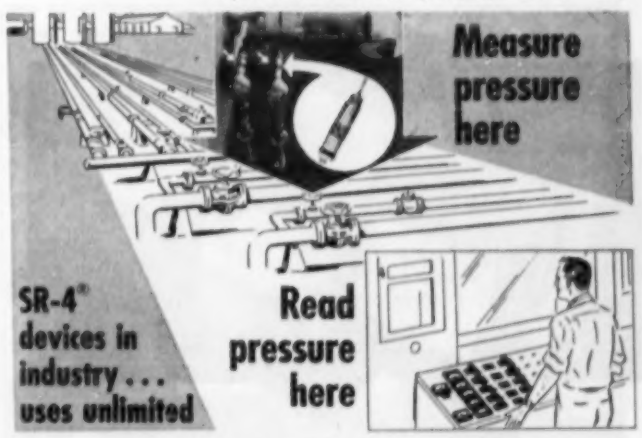
SPECIFICATIONS
Wheel Size: 8" dia. (½ h.p. motor), 10" dia. (¾ h.p. motor).
Spindle: Approx. speed 2450 r.p.m. Sealed ball bearings.
Motor: Standard 2875 r.p.m. 50 cycle or 3450 r.p.m. 60 cycle. Also D.C.
Over-all Dimensions: 49½" high, 18" wide, 20½" deep (10" Grinder ½" wider).

8"—$245.00; 10"—$248.00 each less motor and remote control equipment. Terms are 10% down—balance in 12 months.
F.O.B. Factory

Write for literature on this and other machine tools.

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 374



THE PLANTATION PIPELINE PROBLEM: Plantation sought a method of remote pipe line pressure control to eliminate their calibration, maintenance and fire problems.

THE BALDWIN SOLUTION: After a year's experience with a test installation Plantation installed 24 completely electronic remote indicating systems using nearly 200 Baldwin SR-4 pressure cells.

Plantation reports that their SR-4 Pressure Measuring systems, in use for a year at 12 dual line pumping stations, have required virtually no maintenance and have greatly reduced personnel required for maintenance of equipment and calibration of instruments. There are four reasons why the SR-4 system is so economical for pipe line control:

1. Cell capacities range to 1500 psi and overall accuracy is 1% of full scale. **2.** After a full year's service the SR-4 pressure cells agreed with original factory calibrations within 0.2%. **3.** By eliminating small fluid control piping containing inflammable product, the SR-4 system avoids potential fire hazards. **4.** Ruggedly constructed, hermetically sealed, with no moving parts, SR-4 pressure cells make Plantation's sensing system virtually free of maintenance costs.

Investigate the *unlimited uses* for Baldwin SR-4 Devices! For complete information about a multitude of SR-4 applications, *write* Dept. 3130, Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pennsylvania • Offices in Principal Cities
In Canada, Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as IEN - 375

One of countless different applications where Rockwood Ball Valves outlast and out-perform all other makes.

Do you need a MAINTENANCE-FREE VALVE?

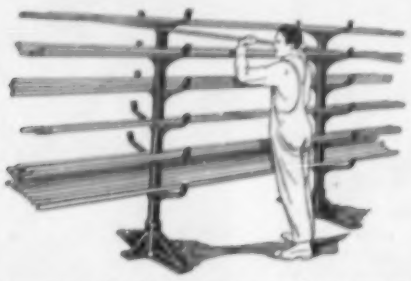
Maintenance-Free in Coolant Service. Previous valves on this grinding machine were repaired or replaced at least once weekly. The present Rockwood Ball Valves, operating 500 times daily, have required no maintenance in over a year.

Other features: full *round* flow, positive leakproof seating, quick opening and closing. Tested and listed by Underwriters' Laboratories, Inc. Write for complete details. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD *FULL-FLOW* BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 376

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

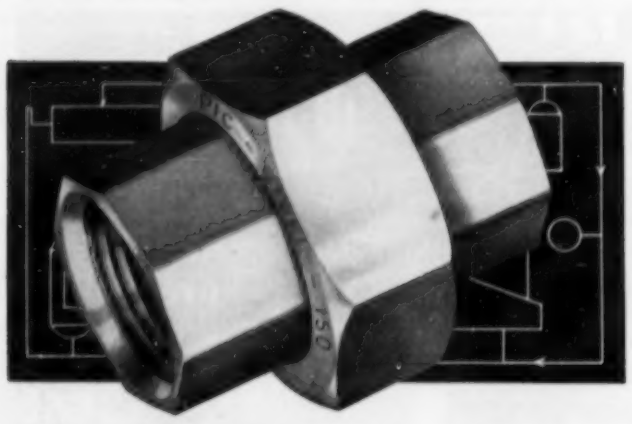
Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 377



Pics fit your new Equipment PICture!

Yes, their eye-catching brightness and strength make these 150 lb. steel unions the choice for original equipment. They go on fast, too, because ends are uniformly flat-sided to accommodate open end wrenches. You can't hurt the steel pipe coupling stock either. Special wedge-type bronze seat for tight seal. Complete zinc plating, even on threads combats rust. Pics cost *less* than a galvanized, *no more* than a black malleable union.

Write for Samples

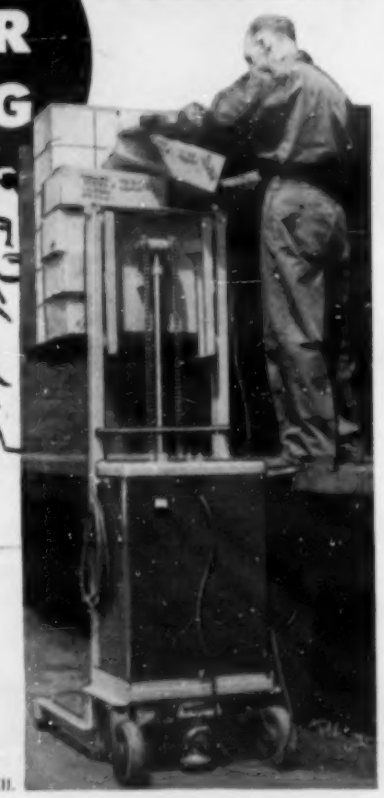
DART UNION COMPANY

130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN - 378

FAST POWER LIFTING

ECONOMY WORKLIFTER



A low cost, battery powered hydraulic lift, hand truck. Controlled by pushbutton cord. Easy to move about by hand on the 8" solid rubber wheels. Will more than double the capacity of a man in moving material. Power lifts a 750 lb. load up to 60". **Net price $695.00 f.o.b. Chicago.**

Order from your jobber

Hand operated SHOPLIFTERS available in capacities 500 lbs. to 2000 lbs. Priced from $183.60 to $417.52.

ECONOMY ENGINEERING CO.

4502 W. Lake St., Chicago 24, Ill.

If you write maker identify as IEN - 379

PIPE FITTING . . Swivel joint, ball bearing, sizes 1¼ to 4 inches

Source: EMSCO MFG. CO.
Box 2098, Dept. 36, Los Angeles 54, Calif.

Catalog FS-104

Pressure rating is to 1,000 lb. and temperature is to 225 deg. F. for this new Type-LPR ball bearing swivel fitting. It is available in the single assembly illustrated and also in double and triple swing. At each of the swivel joints, ball bearings take the thrust load directly and synthetic rubber packings seal against leakage. Several types of synthetic rubber are available to satisfy given service requirements.

The fitting can be repacked in the field. The design permits the use of bar stock, tubing, ring forgings or steel castings for manufacture of the swivel parts. Standard end connections include scarfed or bored ends, threaded or flanged ends. Connections can be furnished for counter-balance arms.

If you write maker identify as IEN - 380

MIXING . . Motor driven machine mounts on hydraulic elevating column

Source: COWLES COMPANY
150 Trackside Place, Dept. IEN, Cayuga, N.Y.

For specified use

Illustrated is new assembly of the company's Ultrafast mixer or dissolver, previously described IEN-10294-50. The machine is available with water hydraulic operation, with pump driven oil or with a combination of oil and compressed air as the operating means, to lift and lower the impeller. The line includes a range of sizes and capacities. A majority of the parts are interchangeable. The patented impeller is adapted by the company's technicians to each application.

If you write maker identify as IEN - 381

Perhaps your own publicity manager is looking for a list of publications and definition of their individual functions to carry news of your own new products to your markets. If he is, you can suggest to him a copy of Bacon's Publicity Checker. It is a 224-page book in which all of the trade publications are listed alphabetically and by industry groups. The groups are shown by number and are defined from the standpoint of reader interests. A 20-page section offers suggestions on preparing news releases and handling publicity. R. H. Bacon & Co., 343 S. Dearborn St., Chicago, Ill., is the publisher. The book lists at $6.

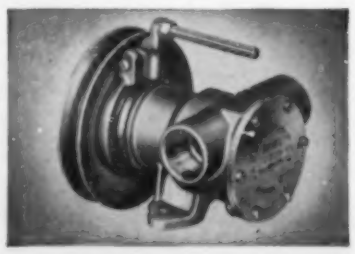
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 382

A PAID NEWS ADVERTISEMENT BY JABSCO PUMP CO.

JABSCO SELF-PRIMING PUMP AND CLUTCH UNITS

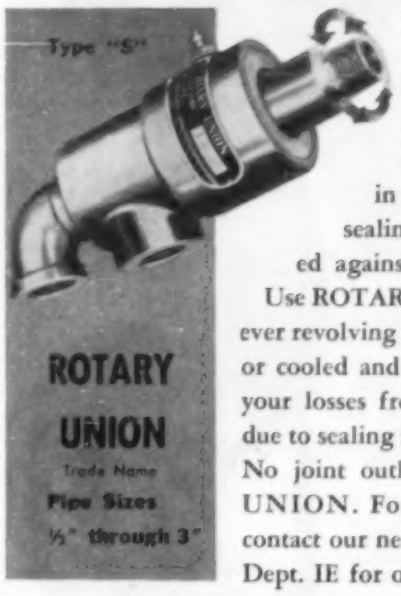
Built-on Clutch
Fingertip Controlled



Jabsco's multi-purpose Pump and Clutch Units are available for immediate delivery. Model 2300 (1" pipe size), and Model 2500 (1¼" pipe size) are small, compact units having the easy-operating clutch built into the pump, eliminating the need for a separate clutch base. Friction cone type clutch can be operated by handle, lever or cable. Units are equipped with New Departure sealed and pre-lubricated ball bearings in both pump and clutch. These compact units may be mounted at any angle desired, and driven by an A or B Section V-belt. Jabsco Pumps are completely self-priming, with dry suction lifts approaching 20'; when primed, as high as 25', and no foot valve is required. The exclusive Jabsco "camflexed" Neoprene Impeller is the only moving part in the pumps. Impeller is easily replaced without disconnecting piping or drive belt. Jabscos are economical, low in first cost, and trouble and maintenance free, even under continuous rugged operation. Liquids are efficiently pumped at low or high speed, in either direction. Model 2300 delivers 1680 GPH and Model 2500 delivers 3300 GPH at 10' head, 1750 RPM. For complete information, write **Jabsco Pump Company,** 2031 North Lincoln Street, Burbank, California.

If you write maker identify as IEN - 383

The ROTARY UNION® is self-aligning, self-adjusting



Here is a completely packless joint which takes care of its own alignment and adjustment and in which moving and sealing parts are protected against stress and strain.

Use ROTARY UNIONS wherever revolving equipment is heated or cooled and you will cut down your losses from work stoppages due to sealing failures.

No joint outlasts the ROTARY UNION. For full information contact our nearest office or write Dept. IE for our Catalog.

"Where Good Connections Count" ●

PERFECTING SERVICE COMPANY

332 Atando Avenue — Charlotte, N. C.
(Home Office & Factory)
Atlanta, Chicago, Cleveland, Philadelphia, Providence, New York, Montreal, Toronto

If you write maker identify as IEN - 384

THIS ____ in your power screwdrivers — SPEEDS WORK — CUTS COSTS

The MAGNA FINDER
(patent pending)

. . . picks up the screw . . . instantly positions it . . . so that with one-hand operation the bit automatically enters the slot and drives it home. Alnico magnet has ten times the "pull" and holds screw firmly without tilting or shifting.

Interchangeable with regular power Screwdriver finders. Available for all makes of power drivers and all sizes of screws. Thousands in use.

Magna Bit Holders®, Magna-Tip Hand Screw Drivers® and Magna-Tip Hex Drivers also employ the revolutionary, cost-saving Magna principle.
®U. S. Patent No. 2,550,775.

Write for folder 65-E information and prices

MAGNA DRIVER CORP.
779 WASHINGTON ST., BUFFALO 3, N. Y.

If you write maker identify as IEN - 385

...for maximum anti-friction bearing capacity in minimum section space...

Use "Split" BALL BEARING BUSHINGS . . .

. . . . require only ¼" section height.

. . . . stability, radial and thrust capacity provided in very light section.

. . . . life of equipment in which application is made increased without adding excessive weight.

. . . . costly methods of introducing lubrication are eliminated by prelubrication.

. . . . many problems of both designers and users are solved by these bearings. Investigate NOW!

Ask for folder containing sizes and load capacities. Call on our Engineering Department for advice and help on your problems.

SPLIT BALLBEARING CORP.
LEBANON, NEW HAMPSHIRE

If you write maker identify as IEN - 386

REALOCK FENCE

keeps your guard up

With a Realock Fence enclosing your buildings and grounds, your guard is always up against the risks of unauthorized entry.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalog.

BRANCHES IN ALL KEY CITIES

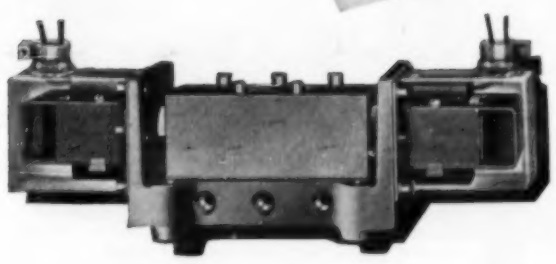
THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION • Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CFI

If you write maker identify as IEN - 387

Quick-As-Wink
AIR AND HYDRAULIC
Control Valves

FEATURE THIS MONTH

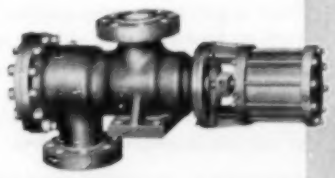


1/8" and 1/4" Double Solenoid Valves

Their reduced amperage requirement simplifies electrical circuits

● These valves are extremely simple in design — but ruggedly built — and will give millions of cycles of efficient, trouble-free, dependable operation. For air to 125 psi, vacuum, or low pressure hydraulic service. Up to 300 cycles a minute. Solenoid armature bears directly against the valve plunger eliminating levers, links, pins, etc. Low amperage requirement simplifies the electrical circuit. The valve is reversed by energizing first one solenoid, then the other. The valve and both solenoids are mounted on an aluminum base, and can be removed independently without disturbing the piping. 2-way, 3-way, double 2-way, 4-way and 5-way actions.

also the following



DESCALING VALVES

Specially designed for descaling hot strip and large steel forgings. Widely used. 2" to 6" sizes. Capacities to 1550 Gals./Min. Design eliminates destructive water hammer and reduces hydraulic shock to a minimum.

HIGH PRESSURE STRAINERS

Used ahead of descaling valves to prevent foreign material from plugging spray nozzles causing scale streaks in strip—also in hydraulic lines to protect valves, cylinders, and other machinery. 1½" to 6" sizes. Highly efficient. Easily cleaned.

For Fully Descriptive Data Sheets Write

C. B. HUNT & SON, Inc.

Hand, Foot, Lever, Cam, Pilot, Diaphragm and Solenoid Control Valves

2034 EAST PERSHING STREET • SALEM, OHIO

If you write maker identify as IEN - 389

VALVE . . Volumetric flow regulator holds adjusted pressure differential

Source: W. A. KATES COMPANY
430 Waukegan Road, Dept. IEN, Deerfield, Ill.

Will not "hunt"

Light slurries, liquids with solids in suspension, hot tar solutions can be controlled in flow rate, independent of fluctuations in either inlet or outlet pressure, by this new Type SA regulating valve. It can be adjusted over a 5 to 1 control range by moving an indicator in connection with a scale at the top of the housing.

The assembly is available with a steel housing and stainless steel trim and valves or with No. 316 stainless steel in all of the parts. In either case the construction is 150-lb. ASA with the valve suited for static pressure to 300 pounds. Variation in inlet or outlet pressure maximum at 125 lb. will be compensated. Flow capacity ranges from 2 to 10 gpm. for Model 1-SA. It is 100 to 550 gpm. for Model 7-SA.

Inlet is on the side near the top, the fluid turning downward through the housing to move through a fixed annular orifice. Pressure drop, across this orifice, is balanced by a stainless steel spring. Any disturbance in pressure conditions, within the line in which the valve is installed, causes the orifice disc to move and adjust the compensating action. The valve can be inspected and cleaned without removing it from the line.

If you write maker identify as IEN - 390

THREADING . . Portable power drive, 1/8 to 2 in. pipe, to 1½ in. bolts

Source: TOLEDO PIPE THREADING MACHINE CO.
1445 Summit St., Dept. IEN, Toledo 4, Ohio

Also to cut and ream

Toledo 88 is a new ½-hp. reversing power drive for pipe and bolt threading. Standard capacity is ⅛ to 2-in. pipe and ¼ to 1½-in. bolts. It will handle geared die stocks and cutters to 12 in. with its universal drive shaft. The motor is universal design for operation on 110-volt ac. or dc. Reducing gears between the motor and the spindle are sealed.

The new machine converts hand tools to power operation, in the shop or on the job, with the machine mounted on a bench or a service truck. A set of legs and a tool tray can be supplied as accessories. Control centers at a protected recessed switch. A safety latch is included on the tool-rest bar on the left hand side. Occasional lubrication is required for the steel backed bronze bushings on the spindle and the spindle gear and drive pinion.

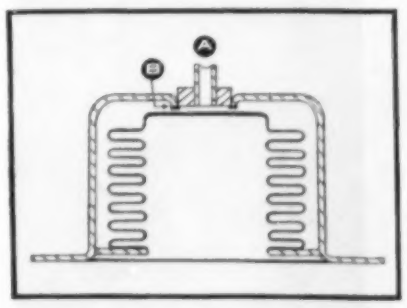
The assembly includes a new 3-jaw scroll chuck on the front and a rear chuck with universal centering. The chuck wrench rides in a rubber holder in the aluminum housing when it is not in use. Positive wrench ejection is a feature of the design to prevent accidental damage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 391

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

TEMPERATURE and PRESSURE CONTROL Bellows cup assemblies ideal for many applications.



Clifford Bellows Cup Assemblies offer the following advantages over regular bellows assemblies: greater protection for bellows; reduction of spring rate, in most cases, for the entire bellows system; bellows can operate at higher rating when pressure is externally applied; less tendency of bellows to buckle; easier provision for extension and compression stops to limit bellows travel.

The diagram shows the Clifford Model A, Plain Cup Assembly. Pressure applied through opening in cup (A) compresses bellows. At release of pressure, bellows returns to rest against stop (B). Besides this simplest, most basic type there are: Model B, Extension-Compression Stop Assembly; Model C, Spring Loaded; and Model D, Adjustable Spring Loaded. Five standard sizes accommodate bellows up to 3" OD. Four types of end fittings available.

Clifford is glad to answer your questions or provide "bellows-engineering" help.

CLIFFORD MANUFACTURING COMPANY,
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 392

TEMCO ELECTRIC FURNACES

used for accurate ashing of dust samples from atomic tests by **ATOMIC ENERGY COMMISSION**

Every day, more plants and laboratories are switching to TEMCO bench-type electric furnaces for *precision* results in process control, general lab work and heat treating of small parts, tools, dies, etc. 1500 Series shown above is one of eight different sizes available - - with either manual or electronic controls. Easy to install and operate, economical. $55 to $107. Write for data and nearest dealer's name.

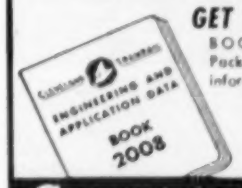
THERMO ELECTRIC MANUFACTURING CO.
482 HUFF ST., DUBUQUE, IOWA

If you write maker identify as IEN - 393

5 TONS SHEET STEEL PER LOAD

- SPEEDS HANDLING
- LOWERS COSTS
- SAVES SPACE
- AIDS SAFETY

One man picks up, delivers directly where needed and unloads, easier, faster, safer, with a Cleveland Tramrail overhead system and sheet grab. Hand or electrically operated equipment.



GET THIS BOOK!
BOOK No. 2008
Packed with valuable information. . . .

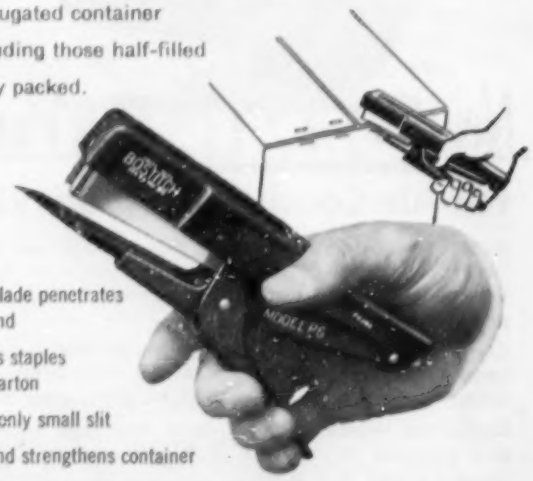
CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4227 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 394

New Bostitch Stapling Plier with a Pointed Blade

For fastening almost any cardboard or corrugated container including those half-filled or loosely packed.



- Sharp blade penetrates easily and
- Clinches staples inside carton
- Leaves only small slit
- Seals and strengthens container

FASTEN IT BETTER AND FASTER WITH

BOSTITCH®
STAPLERS AND STAPLES

For a free demonstration call your local Bostitch representative. He's listed under "Bostitch" in your telephone directory. Or write:
Bostitch
641 Mechanic St.
Westerly, R. I.

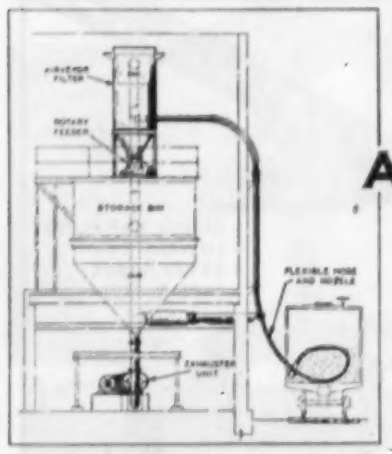
If you write maker identify as IEN - 395

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON
VALVES · AIR AND HYDRAULIC CYLINDERS · CUTTERS · CLINCHERS

If you write maker identify as IEN - 396



Airveyor handling pebble lime in a large steel mill, unloading from cars at rate of 7½ tons an hour.

AIRVEYOR keeps your handling costs **. . . down**

Conveying dry, pulverized and granular materials such as lime, soda ash, flour, sugar, clays, borax, cellulose acetate, magnesium, and numerous other materials with the Airveyor offers many definite savings you cannot afford to overlook . . . lower cost of bulk over bagged materials . . . lower cost of unloading, storing, and in-plant rehandling of such materials. These advantages are yours, plus clean and dustless operation, minimum labor and convenience in reclaiming from storage for delivery to process . . . with the Airveyor.

If your problem involves bulk handling of dry pulverized and granular materials, call on Fuller's 26 years of specialized experience. You can save time and money by calling Fuller . . . get in touch with us, while your plans are in the formative stage.

Write for Bulletin G-1, illustrating and describing the four basic types of conveying systems manufactured by us.

A-169 A
2030

Fuller FULLER COMPANY, Catasauqua, Pa.
Branch offices: Chicago—San Francisco—Seattle
Los Angeles — Birmingham

If you write maker identify as IEN - 397

New DEMING Pump

for Air Conditioning Service

Applications of the new Deming Figures 4350 and 4355 "MOTOR-MOUNT" Centrifugal Pumps include air conditioning, booster, general circulating and other industrial plant services.

Capacities range from 10 to 110 gallons per minute against heads to 100 feet at 3500 R.P.M. Motors (½ to 2 H.P.) have grease sealed ball bearings and stainless steel shaft.

Open type impeller is all bronze, accurately machined and balanced. Rotary type shaft seal prevents leakage along stainless steel shaft.

Performance tables and other data given in new BULLETIN NO. 4355. Write for your free copy.

THE DEMING COMPANY
521 BROADWAY • • SALEM, OHIO

If you write maker identify as IEN - 398

TESTING . . Low temperature chamber to investigate product performance

Source: TENNEY ENGINEERING INC.
26 Avenue B, Dept. IEN, Newark 5, N. J.

Also can be heated

Sub-Arctic is a new addition to the company's line of high altitude, humidity and low-temperature testing equipment. It is designed for operation at minus 40 to minus 170 deg. F. in the specified one of 6 steps. The minus 150 and minus 170 deg. F. models are equipped with the company's compressors to handle Freon at low temperatures.

Five sizes provide 1 to 12 cu. ft. of work space, the smallest 14 in. in diameter by 12 cu. in. in height. The largest is 40 by 22 by 24 inches. The equipment can be provided with air or water cooled condenser and with caster mounting.

If you write maker identify as IEN - 399

WELDING . . Coated arc electrode to repair and build up iron castings

Source: EUTECTIC WELDING ALLOYS CORP.
40-40 172nd St., Dept. IEN, Flushing 58, N. Y.

Technical data upon request

Xyron trade names a new coated electrode for application on iron castings without need to preheat them. The 3/32-in. electrode operates on 35 to 75 amperes. Application can be made in any position. Repairs are possible without dismantling equipment or without special preparation. Oxidizing action of one of the components of the coating neutralizes the area adjacent to the weld deposit.

If you write maker identify as IEN - 400

FLOORS . . Magnesium dock board bridges between platform and truck

Source: MAGLINE INCORPORATED
7930 Mercer St., Dept. IEN, Pinconning, Mich.

Light and strong

New assembly, known as Perma-Dock, of the company's magnesium dock board installs between a pair of bearings in a recess in a shipping platform. It is raised and lowered by hand to clear a truck or bring it into position. Clearance space beneath the board prevents interference as the truck floor moves downward on increasing load. The board is provided with safety curbs on the two sides to prevent truck wheels from colliding with the curb rail and injuring the tires. Because of the lightness of the material, no counter-balance is required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 401

CYCLOTHERM carries entire steam load of conventional boiler in ¼th the space

Walter A. Johnson, Momence (Ill.) Greenhouses, says this about his 50 hp Cyclotherm . . .

"SAVINGS IN FUEL AND MAINTENANCE WILL PAY FOR THIS BOILER IN A FEW MONTHS"

For saving space, fuel, maintenance and money, nothing equals Cyclotherm Steam or Hot Water Generators. Completely packaged units ready to operate on arrival.

Burn oil, gas or combination. Save space of conventional units. Simple flue — no brickwork. Fully automatic controls. Underwriter approved. Exclusive, patented Cyclotherm cyclonic combustion principle—*from cold start to full power in 15 minutes.* Sizes 18 to 500 hp, 15 to 200 psi. Write for free literature: Dept. 29

CYCLOTHERM® STEAM GENERATORS
CYCLOTHERM DIV. UNITED STATES RADIATOR CORP.—OSWEGO, N. Y.

If you write maker identify as IEN - 402

Sure! Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .

Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details

TURNER 3R3 UNI-REDUCER
New simplified speed reducer mounts on motor shaft with a torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 at 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company
3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as IEN - 403

JIG GRINDING ACCURACY *guaranteed**

INFINITE CONTROLLED SPEEDS 30,000 TO 65,000 R. P. M.

Easily connect jig grinder to jig borer or mill

Then you can finish grind in hardened steel to "tenths" . . . jig grind dowel holes square with a ground base . . . move location of holes in hardened steel blocks . . . jig grind interchangeable holes in hardened sections . . . grind small holes with diamond impregnated mandrels . . . grind contours and relief with tungsten carbide burrs . . . grind radii in die sections . . . eliminate jig bushings in tools where close spacing is essential.

Other infinitely controlled air driven spindle applications

Place spindle on most any machine. Use it for finishing contours on hardened steel working surfaces . . . burring or milling die castings . . . routing wood contours . . . carbide milling or finishing slots . . . finishing holes in hardened steel to "tenths" . . . grinding with diamond wheels, carbide burrs, or diamond impregnated mandrels.

Advantages—10 micro finishes using carbide mills . . . 6 micro finishes using mounted points, operates at any angle . . . air driven, air cooled, overheating prevented . . . speed controlled at optimum point . . . 3 5/16" long motor uses little working space . . . By controlling speed at any point you abolish need for many constant speed spindles.

For immediate quotation please state machine tool application. Get this manual of photos showing operations Vulcanaire performs.

*Dependably accurate to "tenths"

Vulcanaire
It's built by toolmakers for toolmakers

VULCAN TOOL CO., 734 LORAIN, DAYTON 10, OHIO

If you write maker identify as IEN - 405

keep production materials moving with

ELECTROLIFT WORM DRIVE HOIST

Safer, smoother, faster action features of ElectroLift will keep your materials and loads moving economically. One-man, quiet operation. Wide selection of speeds, capacities and controls.

For further information consult your ElectroLift representative listed in telephone directory.

ELECTROLIFT

ElectroLift, Inc., 30 Church St., New York 7, N. Y.

If you write maker identify as IEN - 406

Prints your product as you make it!

Gottscho ROLAPRINTER

Automatic Precision Printer for all materials processed in roll, sheet or strip form

A compact printing machine designed for easy attachment to existing processing or handling equipment. Automatically prints continuous or repeated designs, trademarks, code-dates, measure marks, other legends on flexible or rigid materials . . . metal, rocklath, rubber, linoleum, screening, woven fabrics, paper, cellophane, board, etc. Uses fast-drying inks of any color, for light and dark surfaces.

ROLAPRINTER descriptive literature sent on request

Gottscho — ADOLPH GOTTSCHO, INC. — Hillside 5, N. J. — 50 Years of Leadership

If you write maker identify as IEN - 407

Great Motors from Great Britain!

Newman Totally Enclosed Fan Cooled Squirrel Cage Motors

- world-famous NEWMAN MOTORS
- net savings up to 40%
- immediate delivery
- unconditionally guaranteed
- superior design— to N.E.M.A. standards
- offices in principal cities

For the first time, the complete world-famous line (2 million installed in 62 countries since 1935) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market.

Immediately available from our warehouse in New York in a complete range of squirrel cage and wound rotor types in sizes up to 230 H.P. *Any motor sent free and without obligation for examination and testing.*

These are new, high-quality motors stamped with the prestige of a great motor-making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC. 40 BROAD STREET, NEW YORK 4, N.Y.

If you write maker identify as IEN - 408

MOTOR CONTROL . . Line switch, magnetic contactor and pilot circuit

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.

Bulletin 4120 JIC

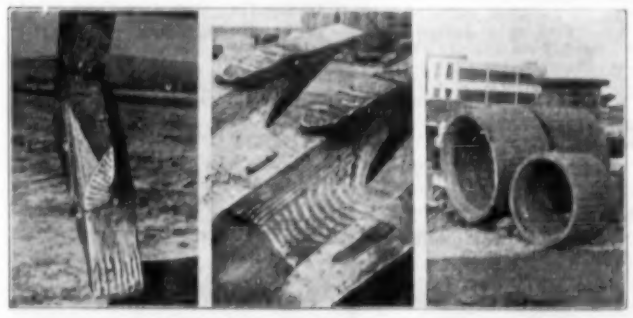
Component parts, in this new ac. non-reversing combination disconnect switch and starter, include a fusible or non-fusible switch, a magnetic full voltage starter, a dual voltage control transformer and a fuse protected pilot circuit carrying 110 volts. Parts are secured to a removable steel panel mounted in an NEMA Type XII enclosure. The assembly meets JIC standards. It is designed for use on equipment where the controls are subject to splashing oil or coolant. NEMA sizes 1, 2 and 3, the largest rating 50 hp. on 440-volt three-phase 60-cycle ac., are included in the line.

The disconnect switch is three-pole design, quick make and break. It is mechanically interlocked with the cover and is actuated by a cover mounted handle that can be padlocked. The control transformer is dual 220/440-volt with 110-volt secondary. The control can be either two wire with low voltage release or three wire for low voltage protection. It can include separately mounted pilot devices. The panel on which the parts are mounted swings outward to service. A channel, around the sheet steel enclosure opening, diverts oil from the sealing gasket on the hinged cover. The cover is held by a combination spring latch and screw fasteners.

If you write maker identify as IEN - 409

HARD FACING . . Arc electrode for equipment parts subject to wear

Source: STOODY COMPANY
11930 E. Slauson Ave., Dept. IEN, Whittier, Calif.



On ripper teeth, buckets, pressure tires

Resistance to all types of abrasion, high compressive strength and impact resistance, combine with fast deposit rate to characterize the company's new Coated Tube Stoodite hard facing arc electrode. Chromium and molybdenum are the principal alloys. The electrode is readily weldable to all carbon and alloy steels, including manganese.

The deposit is semi-austenitic and is not affected by ordinary heat treating methods. Normal welding procedure is employed, either ac. or dc. The deposit shows a Rockwell hardness of 56 to 60 on the C scale. The properties are retained at temperatures to 800 deg. F

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 410

FOR ALL TYPES OF INDUSTRIAL FLOATS

WHEN you order from Chicago Float you're sure of getting high quality, dependable floats, regardless of what your requirements are. You can be sure that every float shipped is backed by more than 35 years' experience in the building of floats for every purpose — high or low pressures and temperatures, corrosive fluids, open tank applications or other specific uses. For everything in industrial floats, look to Chicago Float Works.

A COMPLETE LINE

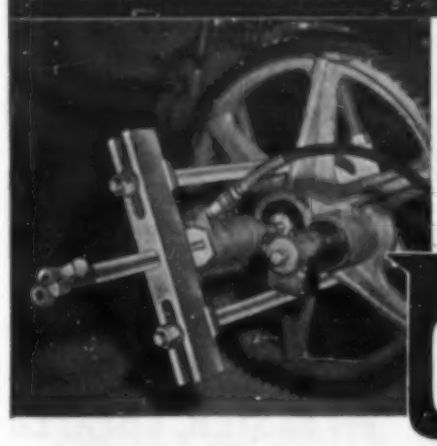
- STAINLESS STEEL — Diameters from 2" to 10". Spherical shape.
- COPPER — Diameters from 2" to 12". Shapes: Spherical, oval, cylindrical (flat or radius heads and with or without internal reinforcements or wear bands), column type, and disc type.
- MONEL, NICKEL, BRASS — Diameters from 2" to 10". Spherical and cylindrical shapes.
- ALUMINUM — Diameters from 4" to 12". Spherical and cylindrical shapes.
- STEEL — Diameters from 2" to 14". Spherical shapes.

SEND FOR FLOAT CATALOG

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 411

PUSH . . . PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE OTC

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN - 412

Introducing NEW IDEAL Cush'N-Blo SOFT-FACE HAMMERS

the Safer Hammer that Saves the Surface!

• New IDEAL Cush'N-Blo Hammers are true SAFETY tools, designed and engineered to give you better soft-face hammer performance—*and save you money at the same time!* Formulated of *Nuplaflex* plastic, the replaceable tips outwear ordinary soft-face materials—often by more than 10 to 1. They cannot chip or mushroom under heaviest blows—or "let go" flying particles to endanger workers. Tips are *spark-proof* and securely locked into *spark-proof* heads. They are not affected by oil, grease, gasoline or ordinary indus-

Cush'N-Blo Hammers are carefully balanced for maximum accuracy and driving force. They turn out *more* work and *better* work with minimum effort because they reduce fatigue by reducing rebound.

SOLD THROUGH LEADING DISTRIBUTORS
See Them Now or Mail Coupon for Full Information

• A HAMMER FOR EVERY JOB
5 Diameters
14 Weights
Regular or Shot-Loaded

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send catalog data and full description of your Cush'N-Blo Hammers.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 414

NEW MEAD INDUSTRIAL
AIR POWER
CATALOG Ready!

Full of Suggestions for FASTER, CHEAPER PRODUCTION!

Illustrated, describes Air Cylinders, Valves, Air Operated Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. *Pneumatic Cylinders.

Write for Complete Catalog

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-14, CHICAGO 41, ILL.

If you write maker identify as IEN - 415

ARE YOUR PLANT AND FACILITIES BURIED?

Model 218

Plants and machinery buried in dirt and debris won't meet our country's increasing production demands. Keep your plant clean at all times.
Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 416

Chip Away... PAINT RUST SCALE

with AURAND CLEANING TOOLS

Clean off accumulation of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

Two sizes in electric or pneumatic models.

FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 417

SNOW PLOW . . Engine driven, cuts into and throws snow to one side

Source: PIONEER GEN-E-MOTOR CORP.
5841 W. Dickens Ave., Dept. IEN, Chicago 39, Ill.

For walks and drives

Reel type 2 blade impeller is driven by a 2-hp. 4-cycle gasoline engine to cut into a snow bank as the operator moves the machine forward. The impeller operates at 1,200 rpm. It throws the snow upward against a deflector that can be set for discharge to either the right or left. A slip clutch prevents damage to the engine if the blade strikes solid objects.

The plow will make a cut 15 in. in width. Control centers at a throttle on the steering handle. Mounting is on two 10-in. wheels equipped with semi-pneumatic tires and two 4½ in. steel guide wheels. List price is $134.50.

If you write maker identify as IEN - 418

STORING . . Steel bin prevents fire in flammable materials

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.

Fire safe design

Number 185, to stand in stationary position on a floor, and No. 186 with 2½-in. casters for portable use, designates a new steel bin to store flammable materials. Interior dimensions are 48 by 24 by 33 in. to hold two standard bales of excelsior. Finish is in olive green. In the event of over heating, the hinged cover closes by gravity to smother any fire that might start in the bin.

If you write maker identify as IEN - 419

DRIVE . . Cast V-belt sheave for "B" belts, mounts tapered bushing

Source: BROWNING MFG. CO.
16 Chester St., Dept. IEN, Maysville, Ky.

$9.30 to $33.20

Eleven pitch diameters range from 7 to 18.4 in. in this new Browning BP sheave. Interchangeable bushings provide a bore range from ½ to 1¾ in. in $\frac{1}{16}$-in. steps. The sheave is available in 2, 3, and 4 grooves with flange width ranging from about 1¾ to 3¼ inches. The split tapered bushing can be removed and replaced quickly. It is held in place by three cap screws through its flange. It measures 3 in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 420

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

NEW DEPRESSED CENTER WHEELS

reduce cost of roughing, weld grinding, cutting off and slotting

Fast, safe grinding at low cost on the roughest jobs—that sums up the story of new CARBOFLEX Depressed Center Wheels by CARBORUNDUM. Some typical applications where this strong, reinforced wheel has proved its superiority include: undercutting and reducing heavy welds, roughing off fins and sharp edges, notching and cutting off gates and risers, removing surface defects, and general purpose roughing, slotting and cutting off.

The CARBOFLEX Wheel is an entirely new and effective combination of tough, top-quality abrasive grain and a strong, reinforced bond. The result is a depressed center wheel with extra-high cutting ability plus extremely high strength and resistance to cracking. Tests prove that too much reinforcing material lowers cutting effectiveness—too little is unsafe. CARBOFLEX Depressed Center Wheels achieve the most effective balance ...with enough reinforcement to hold the wheel together at recommended operating speeds even should it inadvertently become cracked...yet without sacrificing cutting ability.

An exclusive feature of the CARBOFLEX Wheel is the knurled back, which permits the operator to cut with both sides and the edge with no initial dressing.

Try CARBOFLEX Depressed Center Wheels on your toughest jobs. Call our Distributor or Salesman, listed in the yellow pages under "Abrasives" or "Grinding Wheels." Or, if you prefer, use the inquiry form provided by this publication—or write Dept. IEN 81-42, **The Carborundum Company,** Niagara Falls, New York.

"Carborundum" and "Carboflex" are registered trademarks of The Carborundum Company, Niagara Falls, New York

81-42

If you write maker identify as IEN - 421

● The Stuard AUTOMATIC AIR SEPARATOR removes all moisture, oil and foreign matter from air lines. Does not waste air by continuous venting. Patented one-piece separator and eliminator chamber. Write for bulletin.

R&IE STUARD AUTOMATIC
AIR SEPARATOR
R & IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER, GREENSBURG, PENNA.

If you write maker identify as IEN - 422

HARGRAVE Tested Tools
THE CINCINNATI TOOL COMPANY

No. 44 FORGED STEEL SUPERCLAMP

Individually Power-Tested for Better Performance

Strongest Forged Steel Clamp for its weight and at the lowest price.
Frames are forged by our patented process from extremely stiff steel and are heat treated. The screws are hardened steel to prevent bending and battered threads and are of large diameter. Each Superclamp is tested on our Power Testing Machine before it goes into stock.

WRITE FOR CATALOG: Showing Clamps for all purposes, also Chisels, Punches, Star Drills, Brace Wrenches, Washer Cutters, File Cleaners, etc.

THE CINCINNATI TOOL COMPANY
1953 Waverly Ave. Cincinnati 12, Ohio

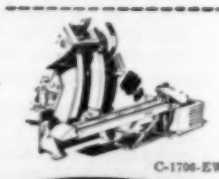
THERE IS AN INDUSTRIAL DISTRIBUTOR STOCK NEAR YOU

If you write maker identify as IEN - 423

BUSCHMAN

PORTABLE PRESS-TENDER

• PRESS TO PRESS
• PRESS TO TOTE BOX
• PRESS TO CONVEYOR



C-1706-EWB

Featuring fast one-man positioning and adjustment, the BUSCHMAN powered belt Press-Tender eliminates costly manual handling . . . adds profits to press room operation.

Operating angles of the Press-Tender are variable from 13° to 48° and working heights are adjustable both front and rear. Adequate capacity for any press is assured by belt speed of 72 feet per minute.

Durable in construction and stable in design, the BUSCHMAN Press-Tender is available in models and sizes for use with any size or type of press.

For complete specifications, send today for Bulletin B150.

PRODUCE MORE ... FOR LESS
Buschman Conveyors
THE E. W. BUSCHMAN CO.
4447 Clifton Ave. • Cincinnati 37, Ohio

If you write maker identify as **IEN - 424**

PORTABLE MIXERS

. . . offer **ECONOMY**

Operating expenses dip to a new low when you choose Portable Mixers from the complete Eastern Series. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures. Your small initial investment pays rich dividends in economy.

For complete mixer selection information write for Eastern Catalog 510-B

Eastern INDUSTRIES, INC.
REGENT STREET, E. NORWALK, CONN.

If you write maker identify as **IEN - 425**

Now *time* your jobs
AUTOMATICALLY with CALCULAGRAPH!

Prints date..
starting time..
finishing time..
— and total elapsed time!

Save time and eliminate clerical errors with Calculagraph accurate-to-the-minute, printed job time records. Use these data cards for computing costs, estimating on reorders. One Calculagraph can record job time data for an entire shop or department.

NEW!
AUTOMATIC DATER!

Standard on all electric models. Automatically changes date — eliminates incorrect dating of records.

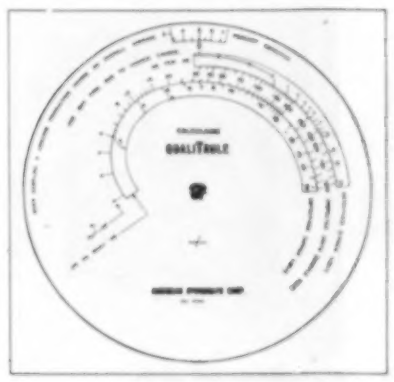
ASK FOR COMPLETE INFORMATION, TODAY
Illustrated literature and sample job cards will be sent promptly on request. Just call or write Dept. 300.

CALCULAGRAPH COMPANY
Sussex St., Harrison, New Jersey
STANDARD OF ACCURACY SINCE 1892

If you write maker identify as **IEN - 427**

CALCULATING . . Circular slide rule solves problems in quality control

Source: AMERICAN HYDROMATH CO.
145 W. 57th St., Dept. IEN, New York 19, N. Y.



About $5

Qualitrule is a new circular slide rule for quality control computations. It presents, in one setting, the upper and lower limits for the number of rejects to be expected in a sample of given size in which the sample has been taken at random from a much larger total having a certain overall average per cent of defective units. The limits depend on sample size and overall average of defects on the product.

The rule covers sample sizes from 2 to 1,000, averages from 0.3 to 20 per cent, upper limits from 2 to 200 units, lower limits from 0 to 50. Figures are read directly for all sample sizes for any one set average without moving the slides. The scales are based on the probability equations given in Dodge and Romig sampling inspection tables. The rule measures 7 in. in diameter.

It is made from sheets of dimensionally stable Vinylite plastic that is not subject to attack by moisture, perspiration or ink. It can be cleaned with a damp cloth. Contrasting colors assist in reading and setting. All scales are on one face.

If you write maker identify as **IEN - 428**

HEATING . . Induction equipment to anneal, harden, braze and solder

Source: INDUCTION HEATING CORP.
181 Wythe Ave., Dept. IEN, Brooklyn 11, N. Y.

Mounts on a bench

Two work stations and a solenoid operated transfer switch are mounted on the housing front of the new 2½ kw. and 3½ kw. electronic generator. One station can be performing an operation while the other station is being prepared to follow it in sequence without loss of operating time. Special application accessories, such as rotating spindles, quench rings, lift fixtures, index tables, remote control switches, variable output control, bench height mounting cabinets, are also available. List prices are $2,500 and $3,375.

Service information, installation instructions and suggestions for building work coils and fixtures are included in a manual that is supplied with each generator. Operation is on 220 or 440-volt 60-cycle ac. with input at 5.8 and 8.1 kva. in the two sizes. Controls operate through a transformer that provides 110-volt ac. control. Dimensions are 27 by 18 by 35 inches. Connections are provided for cooling water to the work coil. Pressure between 40 and 80 lb. is sufficient. Water consumption is 1 and 2 gpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 429**

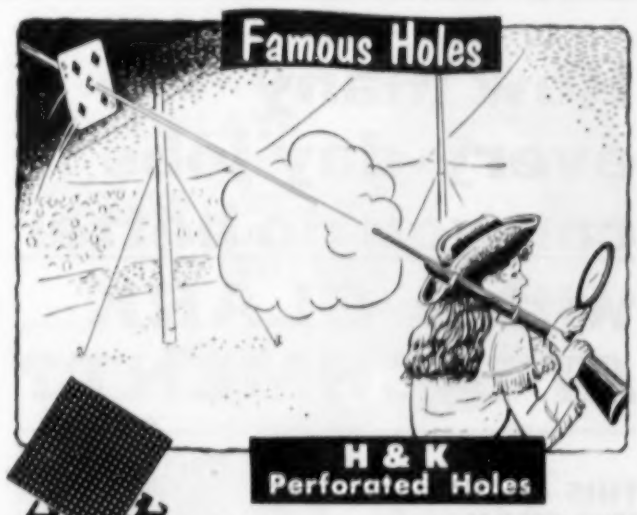
If you write maker identify as **IEN - 430**

SAFE
HERMAN NELSON
PORTABLE AIR HEATERS

Here's safe temporary heat you can always trust! Herman Nelson Portable Air Heaters operate on the "sealed flame" principle. They are vented. They have automatic safety controls. There's no danger of fire, carbon monoxide, smoke or soot. Clean heated air *only* is directed to any spot you select—through flexible canvas ducts. Herman Nelson has the only complete line of completely safe Portable Air Heaters . . . oil or gasoline fired; electric or gasoline powered. Capacities from 125,000 to 450,000 BTU.

Get all the FACTS about ALL Portable Heaters. Write American Air Filter Company, Inc., Dept. 106 Moline, Illinois.

If you write maker identify as **IEN - 431**

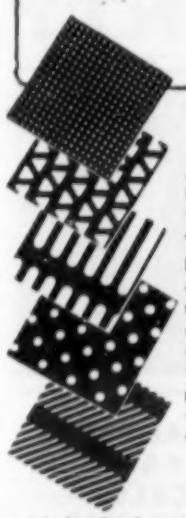


H & K
Perforated Holes

Annie Oakley may have started all this perforating business, but never on a wholesale basis as do H & K. As you know —

"If it can be perforated — H & K can perforate it!"

Difficult perforating involving stainless; large volume perforating of metals, plastics, hardboard; small orders for special needs; holes 9" diameter or small holes to precision tolerances—are all in a day's work and painstakingly produced. We have been building dies for more than 70 years, thus permitting us to provide practically any pattern of round holes, slots, squares, triangles, other shapes and many ornamental patterns from which to choose.



Ask for Catalog No. 62 for complete data.

The Harrington & King Perforating Co.
5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as **IEN - 432**

JOHNSON wide-rehandling clamshell

EASY-CLOSING
big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED
smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ⅜ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging.

MAIL TODAY
to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS *(Koehring Subsidiary)*
Send complete facts on .....-cu. yd. Wide-Rehandling Clamshell Bucket
NAME _____
COMPANY _____
STREET _____
CITY, STATE _____

If you write maker identify as IEN - 433

WHAT R-B PUNCHES SAVE...

If you use shoulder or set-screw type punches, you have excessive press down-time when replacing worn or broken punches.

But, with R-B interchangeable and standardized punches and die buttons you get quick insertion and removal in the press. The R-B ball lock features, that assure positive radial alignment and vertical locking without further keying, permit greater press utilization.

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 72 • 12615 BURT ROAD • DETROIT 23, MICHIGAN

Also Produced in **OTHER ALLIED PLANTS**
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 434

How many every-day jobs can you do better with a CLARK ATTACHMENT?

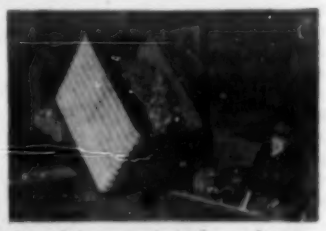
THIS CRANE IS A "MAN OF ALL WORK"

For picking up heavy items that can't be palletized, the Clark Crane attachment is ideal—your fork truck becomes a highly maneuverable crane, ideal for close-quarter work.

FOR HANDLING COAL, SAND, CHEMICALS, LOOSE PARTS —USE THIS HUSKY SCOOP

Makes fast, easy work of many loading and unloading operations; and a popular maintenance tool in many plants—for handling trash, snow, bulk material, or even small parts and castings in bulk.

SAVE TIME BY DUMPING LOADS—USE THIS VERSATILE ROTATING DEVICE



Think of how much time can be saved by dumping containers. This Clark rotating device picks up a tote-box, dumps the load, returns the "empty." Turns 360°. For dumping scrap into cars, loose parts into heat treat.

FREE LITERATURE . . . tells how to get *extra usefulness* out of your Clark trucks by means of Clark attachments—20 in all; devised to meet particular handling needs *outside* of routine production operations. Quickly interchangeable with standard forks. Use the coupon.

Industrial Truck Division
CLARK EQUIPMENT COMPANY, Battle Creek 49, Mich.
☐ Please send brochure on Clark Attachments

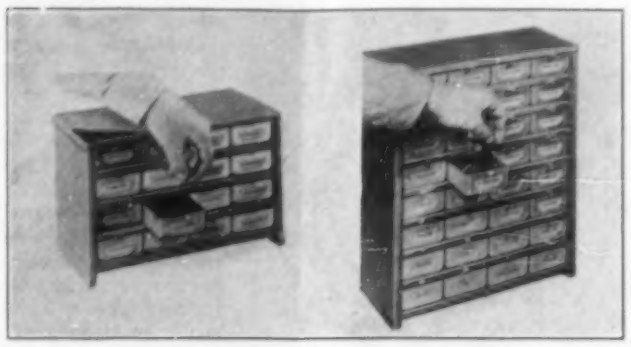
CLARK EQUIPMENT

Name_____
Firm Name_____
Street_____
City_____ Zone____ State____

If you write maker identify as IEN - 436

STORING . . Steel cabinet and aluminum drawers for small items

Source: PERKINS PRODUCTS INC.
170 E. Market St., Dept. IEN, Alliance, Ohio



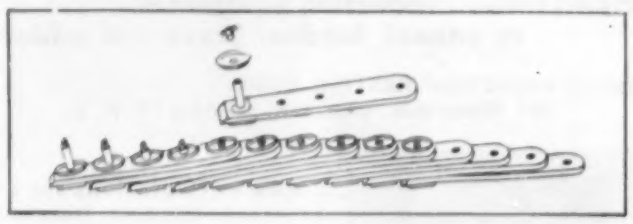
Handy for fastenings, replacement parts

Cabinets with 16 and with 32 drawers are included in this new line of small parts storage equipment. The drawers measure 2¾ by 5⅞ by 1¼ inches. Each has a recessed panel to take an identification label and a tab to pull the drawer out and push it back into place. The cabinets measure 12¾ by 6 in. by 7¾ and 15¼ in. in height. List prices are about $6 and $10.

If you write maker identify as IEN - 437

DRIVE . . Link type V-belt can be adjusted for length on the job

Source: MANHEIM MFG. & BELTING CO.
Railroad Ave. Dept. IEN, Manheim, Pa.



Patent 2639622

Type TD and TE, for D and E drives, designates a new link type V-belt which the company has added to its Veelos line. The belt is made of plys of treated duck joined by riveted studs with removable cup washers and T-screws. The construction results in strength and durability at the key points while permitting the belt to be coupled and uncoupled easily and adjusted in length by adding or removing links. Two types include regular rubber coated for general duty and oil proof for oily or high temperature drives.

If you write maker identify as IEN - 438

Training school has been established for its truck user personnel by Clark Equipment Co., Dept. IEN, Battle Creek 49, Mich. The school is designed for user employees already familiar with general automotive maintenance. School equipment, assembled on a tractor-trailer unit, is touring the industrial centers to hold classes in each dealer's area. Sessions are limited to 60 students. You can name your location to receive information on arrival of the school in your district.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 439

MET-L-WOOD
METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:
- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES
Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

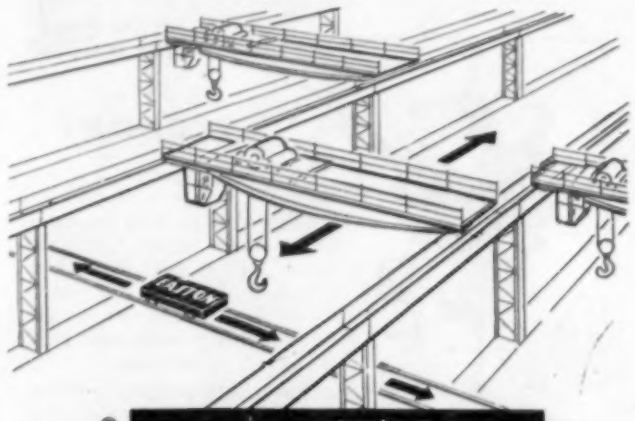
Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

If you write maker identify as IEN - 440

Cross-Bay Transfer

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



A-1040

EASTON

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 441

For Easiest Pipe Threading ...it's a "504" RIDGID

1 Set of Dies Threads 1" to 2" Pipe

- Instant change to 1", 1¼", 1½" or 2" pipe regardless of position of quick-opening lever.
- Wide open easy-to-read size bar . . . adjustable to over and undersize threads.
- Quick-opening lever retracts dies instantly without stopping power drive—no slow backing off.
- 4-jaw workholder centers pipe for accurate threading—no lead screw to jam.

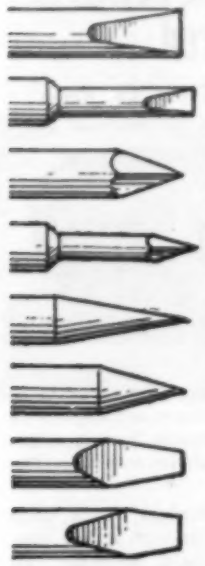
For unmatched, easy, fast, clean threading with your power drive, buy precision-made RIDGID 504 at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 443

ZoKAL SOLDERING TIPS



Here is a new unfreezable, quick heating tip in a type for all high speed soldering. ZoKAL tips are designed for wide application by radio, electronic and instrument manufacturers. They are special plated with a patented slot that keeps them from freezing in the heating element and are protected from oxidation and friction. Makes them long lasting with a corrosion resistant working surface which will bring about a reduction in maintenance cost and production line stoppages due to frequent tip changes. When tip changes are necessary ZoKAL soldering tips eliminate much time. Eliminates reaming out heating element chambers often required from ordinary frozen tips.

ZoKAL tips furnished in all sizes, ¼ inch to 1⅛ inch, for all makes of electric plug type soldering irons and furnished in all shapes to meet your requirements.

ZoKAL PENCIL IRONS

Designed for light work on production lines where cord or iron weight interfere with fast production. Quickly heated with Bunsen Burner or electric oven.

Write today for complete booklet on ZoKAL soldering tips.

ZoKAL SOLDERING TIP SALES
5647 Eastwood Ave. Chicago 30, Ill.

If you write maker identify as IEN - 444

DOCKSON REGULATORS

Built for Better Service

STURDY CONSTRUCTION—Forged brass bodies, shatterproof gauges, dependable safety valves.

LOW COST—Replaceable, self-aligning seats; minimum of moving parts.

GUARANTEED—Against defects in materials or workmanship for one year in regulator proper.

YOUR DOCKSON DISTRIBUTOR—a selected specialist, stocks a complete line of Dockson products to give you fast service and personal attention. We back our distributors 100%.

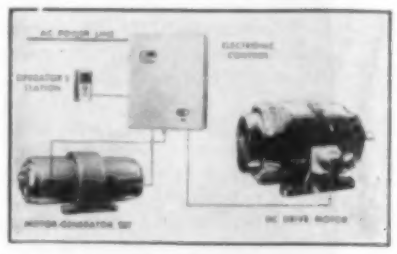
WRITE FOR YOUR DISTRIBUTOR'S NAME AND OUR COMPLETE CATALOG OF WELDING AND CUTTING EQUIPMENT.

Dockson CORPORATION
3839 Wabash Ave.
Detroit 8, Mich.

If you write maker identify as IEN - 446

DRIVE . . Variable speed control, ⅛ to 10 hp. dc. motor from ac. line

Source: MASTER ELECTRIC CO.
126-63 Davis Ave., Dayton 1, Ohio



Variation is stepless

Stepless control is provided by rotating a knob at the operator's station in this new electronic variable speed assembly. The line includes a Type-EV Speedranger design in sizes from ⅛ to 1½ hp. It converts single phase ac. input by means of an electronic rectifier into dc. to drive the variable speed motor. Basic speed is 2,400 rpm. It can be adjusted down to one-sixth of this speed for continuous duty or to one-twentieth for intermittent duty.

Type GB is available in sizes from 2 to 10 hp. It employs a motor generator set to produce dc. output on ac. input together with tube type electronic rectifiers to power a dc. variable speed shunt wound motor. Three basic speeds are 1,150, 1,750 and 2,400 rpm. These can be adjusted down to ⅙ of basic for continuous duty on 50 deg. C. temperature rise and to $\frac{1}{20}$ of basic speed for intermittent duty.

The electronic control permits actuation by signals based on speed, load, current, voltage, pressure, light, temperature, time. The motor generator set and the dc. drive motor are the company's own design in standard open drip proof ball bearing construction. Operation can be specified for jogging, reversing, dynamic breaking and for special duty cycles.

If you write maker identify as IEN - 447

RELAY . . Pneumatic time delay actuated by momentary switch contact

Source: ELASTIC STOP NUT CORP.
1027 Newark Ave., Dept. IEN, Elizabeth, N. J.

Inert gas filled

Hermetic sealing characterizes construction of this new Type SF Agastat relay. Assembly is in an enclosure measuring 2⅛ by 2⅛ by 4 inches. Weight is 1.2 pounds.

Time delay, adjustable from outside of the housing, over a range from 30 millisec. to a little over 12 sec., is initiated by momentarily closing the solenoid circuit. Time delay begins upon de-energizing the coil of the new relay.

The relay was developed initially for use in aircraft and is available to control 24 volt dc. circuits. It will be available in other standard voltages, ac. and dc. The contacts are double break in single, double and 3-pole models. The unit is suited for application where the surroundings are wet, corrosive, dusty or explosive. Operation is independent of freezing temperatures, vibration, shock and acceleration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 448

Ask us about— DIPPED RUBBER PRODUCTS AND COATINGS

Take, for example, this neoprene bellows for protecting the shaft on a gear grinding machine from abrasive materials and metal cuttings. Fully as durable as a pressure molded product, it is surprisingly more economical!

This material-handling basket is dip-coated with plastisol, making it resistant to a wide range of chemicals, plating solution and solvents, enabling a complete cycle of operations to be handled in one basket. Plastisol coated baskets and plating racks effect large savings. They outlast lead or rubber against abrasion and withstand higher temperatures than rubber.

We welcome the opportunity of telling you more about the advantages of dipped neoprene products and plastisol coatings.

Spray-Dip RUBBER CORP.
2671 MAIN STREET BUFFALO 14, N. Y.

If you write maker identify as IEN - 449

KELLER Air Hoist

with positive displacement piston-type air motor

RATED FOR **continuous duty**

Keller Air Hoists can be used continuously over periods of hours (or days) without danger of shortening motor life.

DUST, FUMES cannot injure an air motor. Nor will it burn out, even if stalled all day long.

LOW MAINTENANCE because of simple design.

VARIABLE SPEED from 0 to 17 fpm permits safe handling of fragile loads.

LIGHTWEIGHT — A 1,000-lb capacity hoist weighs only 30 lb—easy to move from job to job.

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 450

GENERAL PLATE
ALCUPLATE®
(Copper-Clad Aluminum)
Reduces Costs
OVER SOLID COPPER OR BRASS

ALCUPLATE Provides High Electrical Conductivity, Soft-Soldering Surfaces, Good Heat Dissipation, Light Weight

Now, you can reduce your cost 15–50% or more over an equal area of solid copper or brass by using General Plate ALCUPLATE.

Made by *permanently bonding* a thin layer of copper to one or both sides of thicker aluminum, ALCUPLATE has practically the same physical and electrical properties as copper, plus the light weight of aluminum. The copper provides an ideal surface for soft-soldering operations, electroplating and other finishes.

ALCUPLATE is widely used in the electrical and electronic fields for terminals, clips, shims, small motor housings, electronic component cases, chassis, and brackets. It is also used for heat transfer assemblies, fin and tube type radiators, printed circuits, costume jewelry and similar applications.

ALCUPLATE can be fabricated by stamping, drawing or forming. Its malleability permits its use in the manufacture of many parts from work-hardened rather than annealed or dead soft materials.

ALCUPLATE is available in coils and flat cut lengths, copper clad on one or both sides of aluminum, ⅛" thick x 13" wide and under.

Technical Data Bulletin No. 702C gives full details. Write for a copy, today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
71 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN - 451

Cut tank maintenance costs!

SPRAY HEAVY-WEIGHT PROTECTIVE MATERIALS *with* VERSATAL PUMPS!

- Air Operated Versatal Pumps deliver material direct from original containers!
- Pump through hoses up to 300' long—drums stay on the ground!
- Handle heaviest materials even in cold weather!
- Speed, Simplify, Cut Cost of material application!

Tank maintenance, always a tough problem, is simplified and speeded up through the use of Spray Equipment and Versatal Pumps! Even heavy coal tar emulsions go on fast and evenly, effecting savings in time and material. This is just one problem out of thousands solved with Versatal equipment in industry.

FREE! A book of ideas on how Alemite Versatal Equipment can help solve your maintenance problems. Write to Alemite, Dept. B-14, 1850 Diversey Parkway, Chicago 14, Ill.

SW ALEMITE *Versatal*

If you write maker identify as IEN-452

How Much Is Washroom Maintenance Costing YOU?

Provide AUTOMATIC 24-Hr. Service. Take a practical look at your own washrooms . . . the expense of towels required over a year . . . janitor time required to fill empty towel cabinets and empty waste containers . . . clean up towel litter. At best, towel service is as good as its maintenance . . . and that maintenance is an overhead expense costing you money!

New Sani-Driers eliminate ALL this needless expense! They provide fast, efficient hand or hair drying service 'round the clock . . . *quickly pay for themselves out of savings!* Approved by Underwriter's Laboratories.

Write for new illustrated literature! Semi-recessed model shown above. Wall and pedestal models also available.

Distributors In All Principal Cities

THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3414 Commonwealth Avenue
NORTH CHICAGO, ILLINOIS

If you write maker identify as IEN-453

When so much depends on so little

Don't settle for less than "Chicago" High Carbon Heat Treated Cap Screws

- For complete hardness from the center all the way out—no soft skin to cause wear or breakage due to fatigue.
- For freedom from scale — cleaner to handle — give a tighter thread fit — have smoother bodies.
- For extra safety — better appearance — ALL at no increase in cost to you.

You get these advantages with "Chicago" Heat-Treated Cap Screws

Corners stay sharp . . . provide positive non-slip wrench grip . . . No decarburized surface.

Bodies wear longer . . . nominal diameter remains to size . . . No decarburized surface.

Threads without nicks . . . hold tighter in engagement . . . No decarburized surface.

Your Service-Conscious Industrial Supply Distributor carries a complete stock of our products. Ask him for samples of "Chicago" Heat Treated Cap Screws. His familiarity with your local field conditions enables him to fill your supply needs promptly and correctly. Ask for "Chicago" and get better service.

THE CHICAGO SCREW COMPANY
7555 WASHINGTON BOULEVARD
BELLWOOD, ILLINOIS

If you write maker identify as IEN-454

Tighten the Reins—Stop Loose Buying

Use **NUPLA** hammers
The one soft-faced line serving all industry

with interchangeable NUPLAFLEX tips

"A hammer for every purpose... ...a purpose for every hammer"

MIGHTY—but gentle

SIMPLIFY—SAVE INVENTORY NUPLA hammers with their complete size and weight selection do the **whole** job...easily interchangeable NUPLAFLEX TIPS in 5 hardnesses meet all soft-faced pounding requirements...replace rubber, rawhide, lead, plastic and all other lines of soft-faced hammers.

HAVE TREMENDOUS ECONOMY APPEAL Super-durable NUPLA hammers have **proved** to outwear ordinary hammers 10-50 to 1...and have played important roles in many cost reduction programs. Write for actual case histories.

THE CHOICE OF INDUSTRY Many users **specify** NUPLA with NUPLAFLEX TIPS, including General Motors, Chrysler, Allis-Chalmers, Ford, Lockheed, Westinghouse, the Army, Navy and Air Force.

WORKERS PREFER THEM NUPLA hammers provide solid blows without sting...reduce fatigue. Also safety tools...non-chipping, no flying particles, sparkproof.

New Plastic Corporation,
1026 North Sycamore, Dept. No. 107, Los Angeles 38, California
Please tell me how to increase the efficiency and reduce the costs of my pounding operations with NUPLA hammers.

Name_____
Street Address_____
City_____ Zone____ State____

If you write maker identify as IEN-455

PRESS . . Electric impact unit to mark, stake, stamp, rivet, swage

Source: BLACK & WEBSTER INC.
445 Watertown St., Dept. 8, Newton 58, Mass.

For built-in use

Electropunch, Jr., is a new head assembly of the company's electric impact equipment, previously described IEN-13653-53. The usual supporting column, base and work table are omitted and the rear of the head unit is equipped with drilled ears so mounting can be made singly or in multiple in any position.

Operation is by means of a solenoid and spring return to deliver accurate controlled blows at 100 or more per minute. The spindle is hardened and ground. It is guided in a honed bronze bearing. The spindle end is drilled and fitted with a set screw with which tools can be secured. Three models rate 1,500, 2,000 and 3,500-lb. impact. They are known respectively as Models JB, JH, and JS.

If you write maker identify as IEN-456

GAGE . . Dial indicator unit for O-ring grooves, inside diameters

Source: RELIANT INDUSTRIES
4947 Firestone Blvd., Dept. IEN, South Gate, Calif.

Catalog 53-A

O-ring grooves, ranging from 31/64 to 4⅞ in. in diameter, can be checked against a master setting with this new dial indicator gage. The unit can be used also to check out-of-roundness, inside diameters, deep holes, recesses, tapers, inside spherical radii.

The gage is self-centering and diameters are measured direct, following initial setting to a master ring gage. A slight rocking motion in one direction indicates the minimum reading of the diameter on the indicator. Gaging motion is transferred directly through a lever to the indicator. Graduations read 0.0001 inch.

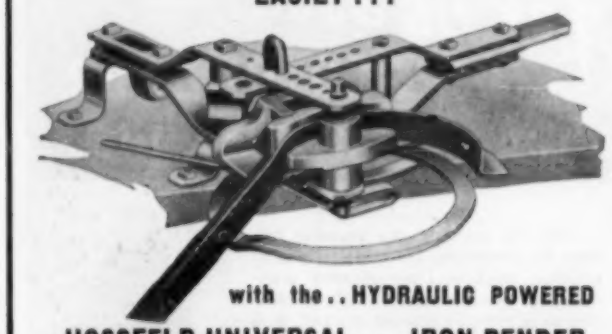
If you write maker identify as IEN-457

Two signs, made of plastic, measuring 14 by 9 in., read "Danger" in a red diamond on a black background and "Work This Side Only—High Voltage Behind" in green on a white background. Both signs are over-laminated with vinyl film and are equipped with brass grommets in each corner. Both are waterproof and unaffected by contact with oil or grease. You can purchase them from Allegheny Plastics, Inc., 294 Thorn Run Road, Dept. IEN, Coraopolis, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-458

ONE MAN bends 2" x 2" x 3/16" Angle Iron EASILY . . .



with the . . HYDRAULIC POWERED
HOSSFELD UNIVERSAL . . . IRON BENDER

Samples of Bar Bending

YOU GET more bending power, greater production, lower labor costs with this HYDRAULIC UNIT . . . smooth, easy bending of rounds, flats, pipe and angle irons . . . in rings, coils, angles, "S" and "U" bends . . . eyebolts, spring eyes, etc.

The HOSSFELD HYDRAULIC BENDER is your answer to improved quality, greater accuracy and faster, more efficient operation.

ASK US TO HELP YOU . . .
WRITE NOW FOR COMPLETE DETAILS

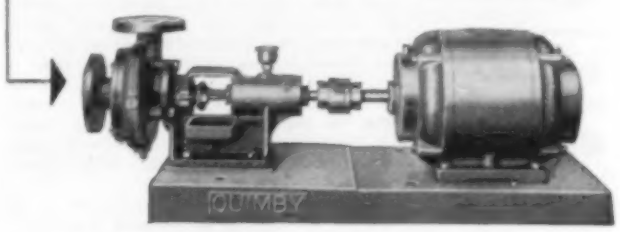
HOSSFELD MANUFACTURING COMPANY
424 WEST 3RD STREET • WINONA, MINN.

If you write maker identify as IEN-459

FOR PROCESS AND MEDIUM DUTY CHEMICAL SERVICE

dependability and economy are assured

with this Warren-Quimby Type "G" Pump



This Warren-Quimby Pump is designed to give both dependable and thoroughly economical satisfaction in process industries and chemical plants having semi-critical requirements. It has proven its merit conclusively whenever correctly applied.

Simplicity of design, sturdy bearings, extra deep stuffing box, tapped catchall, together with strong construction throughout the entire rigid assembly, all contribute to long, useful life at moderate cost.

It is available in 1, 1¼, 1½, 2 and 3 inch discharge sizes. Capacities up to 400 GPM—heads up to 240 feet.

SEND FOR BULLETIN WQ-213 giving Specifications, Selection Chart, etc.

IEN-1

WARREN PUMPS
WARREN STEAM PUMP COMPANY, INC. WARREN, MASSACHUSETTS

If you write maker identify as IEN-460

Narrow Areas No Barrier for

WACO ROLLING TOWER

with ladder frames

WACO Rolling Tower with Ladder Frames offers complete scaffolding freedom in narrow areas. Only 29½" wide, this Rolling Tower can be rolled down narrow aisles, thorugh any standard doorway, or into crowded corners. Straddle brace allows ladder section to be easily wheeled over desks, chairs, filing cabinets and other obstacles. Guard rails afford complete protection. WACO Rolling Towers with Ladder Frames are equipped with all the famous WACO features—heavy-duty rubber tire wheels . . . brake-type casters . . . Built-in, floating coupling pins. WACO "Speedlock Assembly" eliminates bolts, wing nuts, special assembly tools. WACO Rolling Tower with Ladder Frames is designed to give speed, safety, economy in scaffold erection and use. For complete information, see your WACO dealer or write to

WACO *Manufacturing Company*
3567 Wooddale Avenue, Minneapolis, Minnesota
CANADA: Armson Irons Works, Windsor, Ont.
WEST COAST: Waco-May Co., Los Angeles, Cal.

If you write maker identify as IEN-461

NO MORE SLIPS!

NOW make metal, concrete, and wood floors, staircases, areas around machinery and loading platforms SLIP-PROOF — WET OR DRY.

R-MIR-DEK NON-SLIP COATING is the only lightweight safety floor coating that is Fire retardant, Anti-corrosive, Easily applied, and Oil, Grease, Alkali, and Acid-resistant. Compounded of durable phenolic resins and polymerized oils with everlasting aluminum oxide granules added.

FREE 2-color R-Mir-Dek brochure. Write to Department IEN-1

MIRACLE ADHESIVES CORP.
214 E. 53rd STREET, NEW YORK 22, N. Y.

If you write maker identify as IEN - 462

HOW TO PROTECT VULNERABLE SURFACES AGAINST CORROSION

Wherever you have a corrosion problem, you will find this guide helpful in working out an economical and practical solution. Based on the experience and research of TAPECOAT engineers since 1941, this factual booklet shows where and how TAPECOAT coal tar coating in handy tape form can be used to overcome corrosive action—both underground and above ground. It presents proved methods of protecting pipe, pipe joints, fittings, couplings, tanks and other vulnerable surfaces, together with case histories demonstrating the ability of TAPECOAT to meet the most severe conditions.

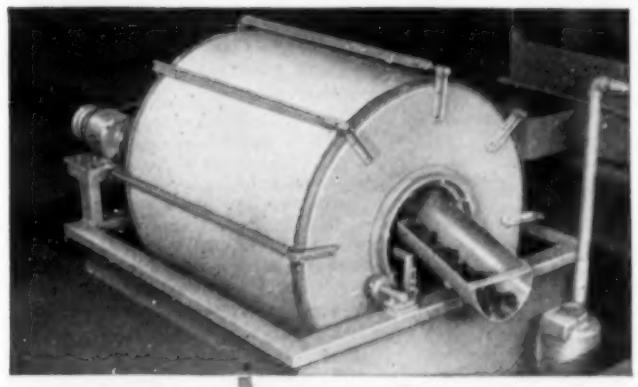
Write for your copy of this helpful guide today.

The TAPECOAT COMPANY
Originators of Coal Tar Tape Protection

1553 Lyons Street
Evanston, Illinois

If you write maker identify as IEN - 463

The MURRAY WAY INDUSTRIAL FILTER



a revolutionary development in solution reclamation that gives you these money-saving features!

- **AUTOMATICALLY OPERATED**
- **SELF-CLEANING**
- **ECONOMICAL**
- **COMPACT**
- **ADAPTABLE**

The Murray-Way Industrial Filter automatically rotates fresh filtering area into position while simultaneously ejecting the contaminant. With this new unit costly consumption of throw-away filtering media is eliminated since the wire filtering screen has many times the life of cloth filtering webs.

The Murray-Way Industrial Filter is a compact unit. It offers unusually great filtering capacity in proportion to area occupied. Amazingly adaptable, the Murray-Way Filter may be used with an individual machine unit or as a central filtering station for many units. Capacity of filtration may be easily increased by adding filters in tandem—separately or in the same tank, to meet requirements. A selection of filtering screen material and size of screen opening can be supplied in monel, stainless steel, brass or bronze to fit your requirements.

For technical details of operation—write for Bulletin F-5301.

other Murray-Way equipment

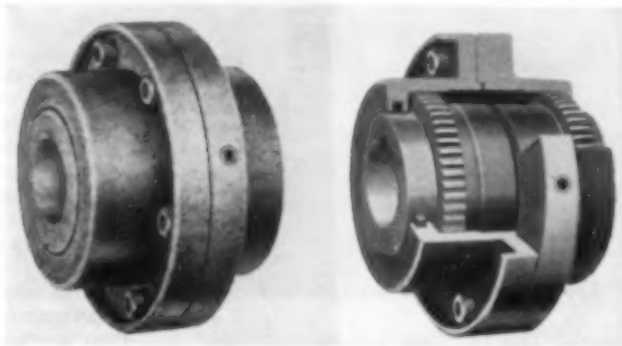
- Micro-Polish Equipment
- Polishing and Buffing Conveyors
- Automatic Dial Tables
- Standard and Special Polishing Heads
- Specially Engineered Automation
- Automatic Loaders and Unloaders

MURRAY WAY CORPORATION
POST OFFICE BOX 180—BIRMINGHAM, MICH
AUTOMATIC POLISHING, BUFFING, GRINDING, FILTERING EQUIPMENT

If you write maker identify as IEN - 465

DRIVE . . Flexible coupling, high speed, 1 to 6 in. maximum bore

Source: LINK-BELT COMPANY
305-9 N. Michigan Ave., Chicago 1, Ill.



Illustrated details in Folder 2375

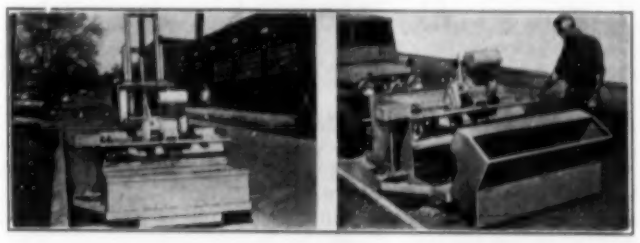
New coupling carries internal gear teeth in its two-part heat-treated metal housing. These teeth mesh with crowned teeth on the steel hubs designed to provide clearance at the roots of the internal gear teeth when the hubs are out of line with the housing. O-rings seal against leakage between the hubs and housing. Cap screw heads are protected by a flange on one of the body parts. Threaded puller holes are machined in the hubs for use in removing them from their shafts. Full tooth width remains in mesh as the driving and driven shafts float axially.

Ten sizes in the line carry ⅜ to 2-in. stock bore and can be bored out for shafts from 1 to 6 in., or more under special conditions. Rating is 2 to 450 hp. at 100 rpm. Maximum speed is 12,000 to 4,000 rpm. The assembly weighs 3 to 296 pounds. It measures about 3¼ to 16½ in. in greatest diameter by 2½ to 13½ in. in overall length. Smallest hub diameter is 1½ to 8¾ inches. The coupling can be supplied with the steel hubs bored for either a slip or a shrink fit.

If you write maker identify as IEN - 466

CLEANING . . Engine driven sweeper can be propelled by truck or tractor

Source: LITTLE GIANT PRODUCTS INC.
1530 N. Adams St., Dept. IEN, Peoria 3, Ill.



Driven by a Wisconsin engine

New design of the Yard Bird sweeping machine, previously described IEN-8626-51, includes assembly on its own wheels and arrangement at the rear for clamping to a truck or tractor with which it can be moved forward. The new design is not dependent upon a fork lift truck as in the case of the original machine. The cylindrical brush measures 48 in. in width. It delivers into a dirt hopper that can be dumped when it has been filled. A 20-in. gutter broom can be specified. Standard equipment includes a 9 cu. ft. hopper and 25-gal. sprinkler.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 467

with MULTI-CLEAN CONCRETE FLOOR FINISHES and THE MULTI-CLEAN METHOD

Concrete floor maintenance ceases to be a time killer and financial burden with the efficient, economical Multi-Clean Method. Multi-Clean Neo-Dry Concrete Sealer or Multi-Clean Concrete Preserver fortifies concrete against abrasion, oils, acids. Eliminates flaking and dusting. Conditions surface for heavy traffic by imparting a tough, sanitary finish . . . is an excellent base for Multi-Clean Anti-Slip Waterproof Wax.

Eliminate long hours of scrubbing and sweeping with the Multi-Clean Scrubber and Multi-Clean Wet-Dry Vacuum, a floor maintenance team unexcelled for reducing floor care time and costs on every type of floor. Write us about your floors and we will show you how to profit by using the Multi-Clean Method.

Write Multi-Clean Prod., Inc., Dept. IE-1 for information

Multi-Clean All-Purpose Scrubber

Multi-Clean Wet-Dry Vacuum

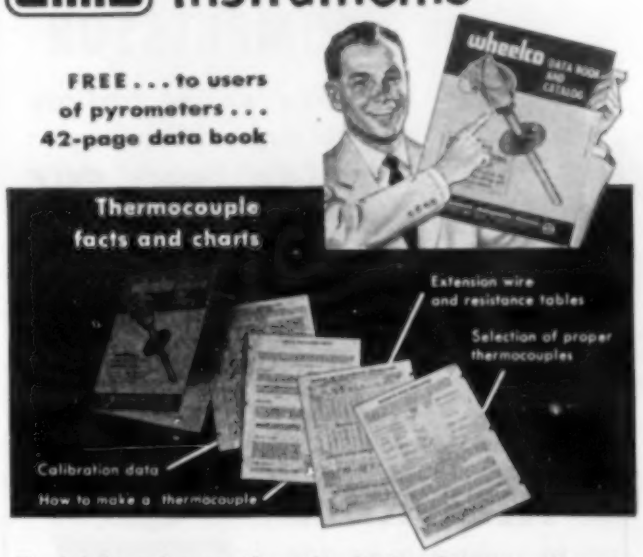
MULTI-CLEAN
2277 Ford Parkway
ST PAUL 1, MINNESOTA

free! **FLOOR MANUALS**—Handy, file size, each manual deals with a specific type of floor, its characteristics and care . . . concrete, terrazzo, wood, asphalt and rubber tile, linoleum.

If you write maker identify as IEN - 468

BARBER COLMAN Wheelco Instruments

FREE . . . to users of pyrometers . . . 42-page data book



Here's information to guide you in selection of proper sensing units and accessories for improved operation of temperature instruments. This 42-page Wheelco Data Book and Catalog gives you complete data on thermocouples, radiation thermocouples, resistance bulbs, and other accessories, including wire sizes, resistance and temperature millivolt curves. Write for your free copy today!

Factory-trained field engineers in all principal cities

WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. A, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 469

Fans . . Blowers FOR ALL INDUSTRY

"Standard Units or Custom Design"

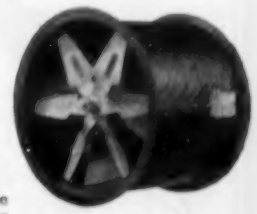
DOUBLE SWIVEL AEROSPOT

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

6 Blade DYNAFLOW Unit
Also available in two and four blade types. Sizes, 16" to 36".



DUCTYPE BLOWER
Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 470

8% Voltage Drop at 700% Inrush Current

with HEVI DUTY Control Circuit TRANSFORMERS

Exceptionally good regulation on high inrush current circuits is provided by compact Hevi Duty Control Circuit Transformers. These transformers are designed for control panel installation. Firmly anchored screw type terminals simplify wiring.

Write for regulation curves and data.

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 471

JOY WG-9 "Industrial-Air" COMPRESSOR

Saves space—gives you top efficiency—built for heavy duty

- ★ Full force-feed lubrication of all working parts
- ★ Replaceable cylinder liners and crosshead guides
- ★ Small floor area and simple foundation requirements
- ★ Anti-friction main bearings

15 Sizes—172 to 881 CFM
20 to 150 psi
FREE BULLETIN

For complete details, write for new Bulletin A-43, or...

Consult a Joy Engineer

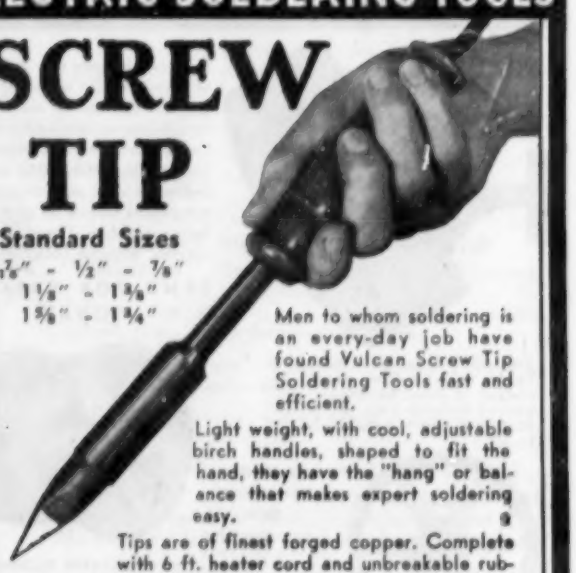
WAD 13088

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 472

VULCAN ELECTRIC SOLDERING TOOLS

SCREW TIP



Standard Sizes
7/16" - 1/2" - 7/8"
1 1/8" - 1 5/8"
1 5/8" - 1 3/4"

Men to whom soldering is an every-day job have found Vulcan Screw Tip Soldering Tools fast and efficient.

Light weight, with cool, adjustable birch handles, shaped to fit the hand, they have the "hang" or balance that makes expert soldering easy.

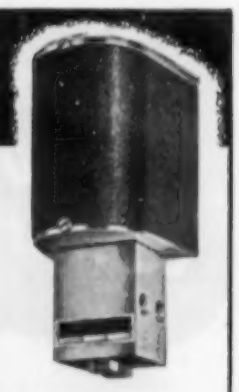
Tips are of finest forged copper. Complete with 6 ft. heater cord and unbreakable rubber plug. • U. L. Approved.

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Vulcan Electric Soldering Tools, Solder Pots, Glue Pots, Branding Irons. Vulcan Electric Heating Elements.

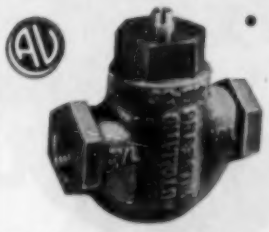
If you write maker identify as IEN - 473

Solenoid VALVES



PILOT VALVES
3-WAY 4-WAY
For operating Master Valves and Small Cylinders

• • •



***Speed Control* VALVE**
Controls speed of Air and Hydraulic Cylinders

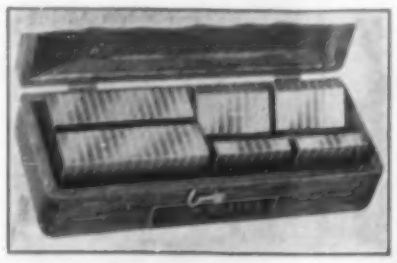
***3-Way and 4-Way* VALVES**
Pilot Operated
Sizes 1/4" — 3/8"
1/2" and 3/4"
Write for Bulletin

AUTOMATIC VALVE CO.
37421 GRAND RIVER AVE., FARMINGTON, MICH.

If you write maker identify as IEN - 474

CHUCK . . Adaptor blocks to hold work on a magnetic chuck

Source: GEORGE SCHERR CO.
200 Lafayette St., Dept. IEN, New York 12, N. Y.



Special shapes can be specified

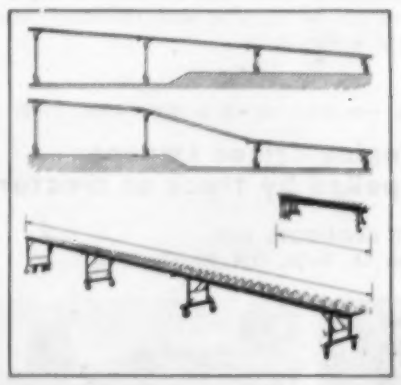
Alternating laminations of 1/16-in. brass and 1/8-in. magnetic type iron make up the new standardized construction of the company's Magne-Blox, previously described IEN-12996-45. The new units can be employed on electro-magnetic and permanent magnet chucks. They can be positioned and then surface ground, for a particularly accurate set-up, to save the need for surface grinding the chuck itself.

The blocks are available in square and rectangular sections, in L-shapes and in V-type. A set, as shown in the illustration, to consist of two parallels measuring 1 by 1 3/4 by 3 3/4 in. and two V-blocks measuring 1 3/4 by 2 5/8 by 1 7/8 in. in a finished wood case, lists at $22.25. A pair of parallels, measuring 1 by 3 by 7 3/4 in., lists at $36, also in a wood carrying case.

If you write maker identify as IEN - 475

CONVEYING . . Telescopic unit presents an extended stepless surface

Source: WILKIE COMPANY
5520 Arch St., Dept. IEN, Philadelphia 39, Pa.



Handles loads smoothly

Rollers or wheels can be specified in the 10-ft. sections of this new design of the company's telescoping conveyor, previously described IEN-8710-51. The new unit employs a telescope joint that permits operation on uneven or stepped surfaces, as well as on level floors, following height adjustment of the supports to the maximum expected difference in level. The conveyor extends from either end and adjusts to expanding and diminishing loads in both loading and unloading operations. Width is 12 or 18 inches. The three section unit extends to 30 feet.

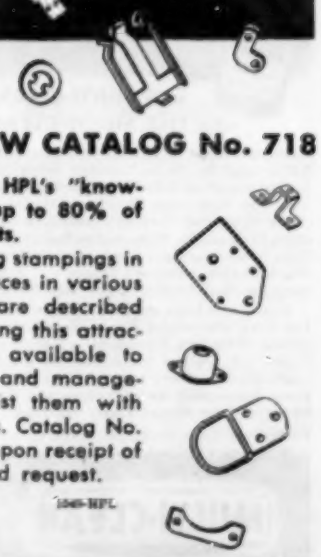
If you write maker identify as IEN - 476

Cobalt, activated to emit gamma rays, is employed as the radioactive source in a new fluoroscope to examine products, filled containers, shoes, thin metal castings, for foreign inclusions, defects. The cobalt takes the place of a standard X-Ray tube. It radiates 4 watts of gamma rays at a cost of about 1/2 cent per watt hour. The new instrument is available from Radioactive Products, Inc., 443 W. Congress St., Dept. IEN, Detroit 26, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 477

SHORT RUN STAMPINGS



DESCRIBED IN NEW CATALOG No. 718

New catalog describes HPL's "know-how" which can save up to 80% of conventional tooling costs.

Facilities for producing stampings in runs of 25 to 25,000 pieces in various shapes and materials are described and shown. HPL is making this attractive four-page catalog available to production, purchasing and management personnel to assist them with their stamping problems. Catalog No. 718 will be sent to you upon receipt of publication or letterhead request.

1045-HPL

HPL Manufacturing Co.
15175 CHARDON ROAD, CLEVELAND 17, OHIO

If you write maker identify as IEN - 478

NOW you can have METERED IDENTIFICATION for

formula, inventory and cost controls

***STAINLESS STEEL* METER**
Inside and Out

STOPS CORROSION PROBLEMS HANDLING FOODS, PHARMACEUTICALS, CHEMICALS, OTHER LIQUIDS

This new Rockwell Type 2BC Rotocycle meter is of all-stainless steel construction; corrosion-resistant, easy to clean. It provides accurate records of quantities of liquids handled which are so important in quality control, scheduling, cost accounting and tax analyses. Quantity Control Registers and Remote Registration Systems are available. Described in Bulletin OG-403. *Write Rockwell Mfg. Co., Dept. B-13,* Pittsburgh 8, Pa.

You Can RELY ON ROCKWELL INDUSTRIAL METERS

If you write maker identify as IEN - 479

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00"—in lengths of 4" to 720". Special models for special problems

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 480

ANY AIR . . . ANYWHERE . . . foul or moist, stale or dry, smoky or gaseous . . it's up and out quickly with a Muckle Vent. Proven performance of Muckle Vents guarantees superior efficiency on any building, under any conditions. Architects and builders who compare specify reliable Muckle Vents. For greater working efficiency or controlled customer comfort . you can depend on Muckle Vents. Streamlined, propeller driven, roof mounted . . motor out of air stream. 15 sizes - 254 CFM to 10280 CFM. Write today for FREE Application information

Muckle

MOISTURE IS NO PROBLEM
Remove moisture filled air with maximum efficiency.

MANUFACTURING COMPANY
OWATONNA 33, MINN.

If you write maker identify as IEN - 481

One More Thing You Have Been Asking For—

"Centre-Seal'd"

POWER RECTIFIERS

The "outside" collector serves as a seal against paint and moisture penetration to the inside or center collector. This provides clean contact between the inside collector and plate surface — a near-zero resistance even after years of operation.

Write or call for complete information.

Sarkes Tarzian

RECTIFIER DIVISION

415 N. College Ave., Dept. B-1, Bloomington, Ind.
In Canada—50 St. Clair Ave., N. W., Toronto

If you write maker identify as IEN - 482

cochrane

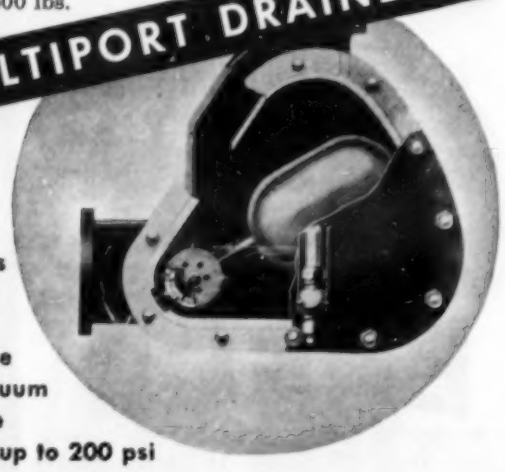
ALL SERVICE SEPARATORS

. . . for removal of liquid entrainment (water, oil, etc.) from vapors-gases

Clean, dry vapor-gas (steam, compressed air) is assured at point of use since liquid entrainment is effectively separated by a scientifically designed, impingement type baffle and immediately moved to the separator drain. Separated liquid cannot be wiped or carried over or under baffle to the outlet path. Pressure loss is practically nil since areaways through separator are much greater than cross-sectional area of inlet.

In all sizes ½" to 12" for working pressures up to 600 lbs.

MULTIPORT DRAINERS



. . . for continuous discharge of vapor condensate under vacuum or positive pressures up to 200 psi

Instantaneous response • Tremendous discharge capacity due to large port areas • Only one moving element • Self-regulating, self-cleaning cylindrical valve never leaves seat • Position handle outside body permits manual closing or opening wide to serve as an effective blow-off • Several types in many capacities available.

Write today for full details.

cochrane corporation

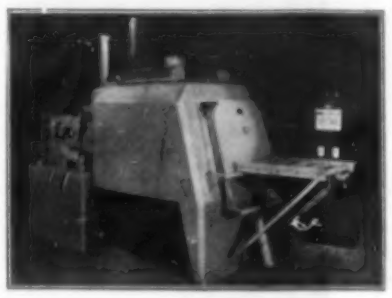
3152 N. 17th Street, Philadelphia 32, Pa.

Representatives in principal cities of U.S.A.

If you write maker identify as IEN - 484

HEAT TREATING . . Convection furnace, automatic timed cycle, for small work

Source: IPSEN INDUSTRIES INC.
710 S. Main St., Rockford, Ill.



Model T-300

A batch of work is entered on a suitable tray through the charging door at the front of this new furnace. The controls are set and the operation continues in a sequence that includes opening the rear heating chamber door after the desired heating interval, forwarding the work to the elevator in the quenching chamber at the rear, holding it here for air cooling or lowering it to quench in the enclosed tank, returning it to top position and delivering it through the rear door. In the meantime, the heating chamber door will have closed and a new load can be entered into the furnace. Capacity is 300 lb. per hour. Temperature is to 1,850 deg. F.

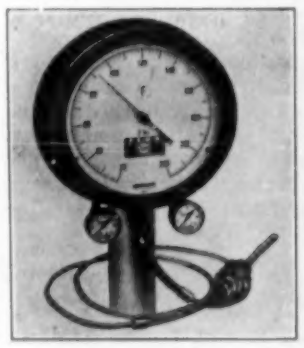
The furnace is available for gas or electric heat, applied vertically between the brick insulation and an interior demountable baffle. An endothermic atmosphere is circulated around the baffles, past the radiant tubes and then up through the floor and the work by a metal alloy fan mounted at the top of the heating chamber. The fan is removable through the top baffle opening without disturbing the brick or tile.

Atmosphere control, which is maintained in both the heating and quenching chambers, assures bright scale free work so no cleaning operations are required prior to plating or painting. The furnace measures about 17½ ft. in length, 5½ ft. in width and 9½ ft. in height. Chamber dimensions are 24 by 36 by 12 inches.

If you write maker identify as IEN - 485

CONTROL . . Dial thermometer combined with pneumatic transmitter

Source: PENN INDUSTRIAL INSTRUMENT CO.
4108-12 Haverford Ave., Philadelphia 4, Pa.



Catalog 1022

Air pressure is varied in a control line between 3 and 15 lb. by this new combination of 8-in. dial thermometer and pressure transmitter. The equipment can be employed to provide remote indication of temperature in an overall range between minus 40 and plus 1,000 deg. F. and to actuate standard pneumatic control instruments. Application can be made indoors or outside on a 2-in. pipe pedestal, wall or panel.

The thermometer is mercury actuated with a temperature sensitive bulb, flexible armored capillary connection and bourdon tube. Various types of bulb are available for use in liquids, air, molten metals. The transmitter employs a fixed nozzle, enclosed calibrating bellows, balanced by a spring. The relay is reverse acting so the unit is not subject to changes in supply air pressure.

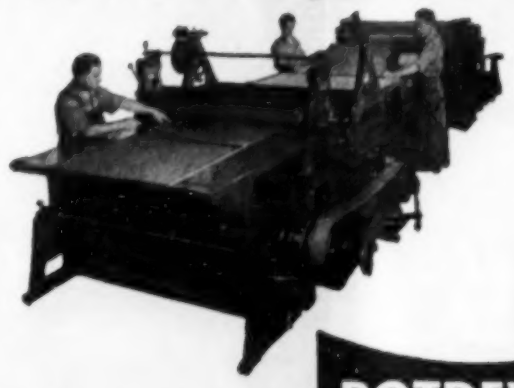
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 486

POTDEVIN

60 years of dependable service

50" wide conveyor
GLUING MACHINE and COMBINING PRESS



Handles webs or sheets. Thermostat control for hot glues. Patented dial control regulates coating of adhesive. Single adjustment for overall pressure of combining rollers.

Consult our engineers on any coating problem. Literature on request.

POTDEVIN MACHINE CO.

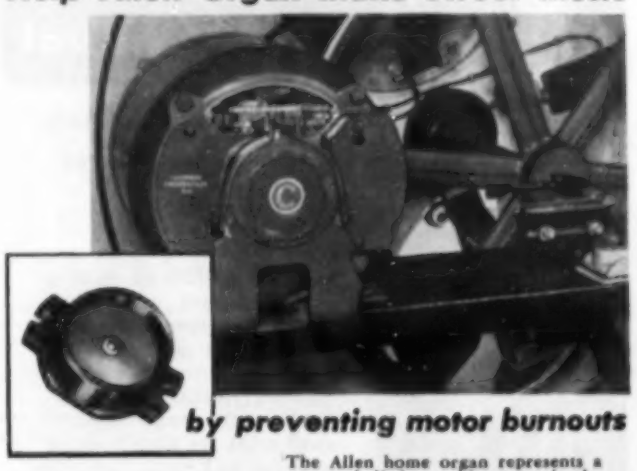
213 North Street
Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

If you write maker identify as IEN - 487

KLIXON PROTECTORS

Help Allen Organ make sweet music



by preventing motor burnouts

The Allen home organ represents a new and distinct achievement in the industry. It will produce directly from the keyboard true bell tones such as Chime, Glockenspiel, Music Box as well as Marimba tones, Harp tones, etc., through the regular organ mechanism.

To keep the motor operating in the "Gyrophonic" speaker mechanism Allen Organ Company uses motors with built-in *Klixon Protectors.*

Here's what Mr. Jerome Markowitz, president, has to say about Klixon Protectors:

"We insist that the motor which is included in the "Gyrophonic" speaker mechanism of our electronic organ be equipped with Klixon overheat protectors. This not only offers motor protection, but also prevents disintegration of the morale of a customer whose instrument 'burns out.'"

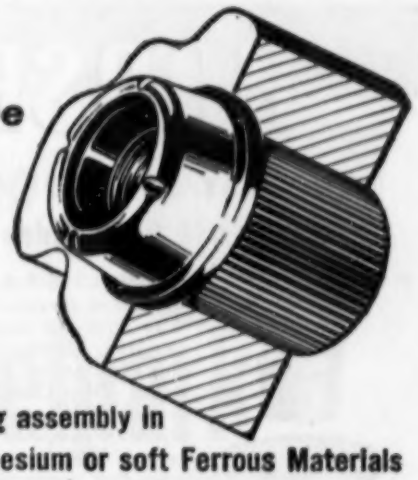
You, too, can provide your dealers and consumers with motor burnout protection by requesting and specifying that your motor manufacturer supplies you with motors that have Klixon protectors built in. The additional cost is exceptionally low, while the benefits are extremely high.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
201 Forest St., Attleboro, Mass.

KLIXON

If you write maker identify as IEN - 488

spline-type ELASTIC STOP nuts



for self-broaching assembly in Aluminum, Magnesium or soft Ferrous Materials

- Driven into pre-formed or drilled holes, spline nuts broach a tight grip into the casting.
- Thread-tapping problems are avoided; the nut becomes a threaded steel insert as well as a fastener.
- Spline nuts remain permanently in place . . . save production and assembly time.
- **WRITE FOR** design information on self-locking, vibration-proof Spline Nuts and other standard ESNA fasteners. Address Dept. N37-135.

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 489

Chicago MOUNTED Wheels

. . . now even better with **79E BOND**

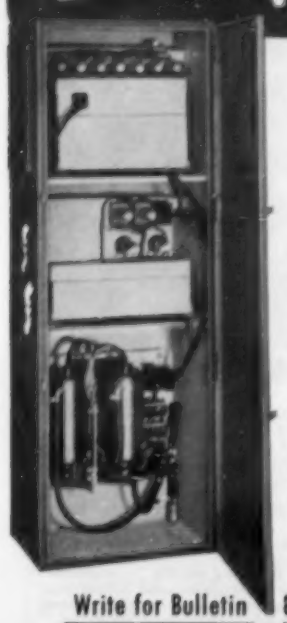
Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg. Co.*
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 490

Simplified Precision Welder Control



- Greatly Simplified Circuits
- Timing Accuracy-Assured
- Easy Inspection and Maintenance

APPLICATION: for welding stainless steel, nonferrous metals, and other critical spot welding jobs requiring electronic synchronous-precision control. (Available with current wave shape control auxiliaries for aluminum or alloy metals.)

at left • Class 8993 NEMA Type S2H Synchronous-Precision Controller available with 600 or 1200 frame contactor. Can be arranged either for side of machine or wall mounting.

Write for Bulletin 8993

Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 491

HANSEN

TWO-WAY SHUT-OFF COUPLING

Shuts Off Both Sides of Line

Series HK

Both ends of line are positively sealed when you disconnect a Hansen Two-Way Shut-Off Coupling. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected — practically eliminate spilling of liquid or escape of gas when disconnecting Coupling. Does not depend upon line pressure to seal. Sizes 1/8" to 1". Female pipe thread connections.

To connect, merely pull back sleeve, push Plug into Socket. To disconnect, pull back sleeve. This unlocks Coupling — immediately and automatically seals both ends of line.

Also Straight-Through and One-Way Shut-Off Couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 492

MINI-BRUSHES CLEAN HOLES

Too Small for any other method

Tiny holes in valve mechanisms, in electronics and electrical equipment, in hydraulic and pneumatic controls can be made clean, free from burrs, even burnished by Mill-Rose Mini-Brushes.

Mini-Brushes are specially made in decimal sizes to clean specific sized holes. Smallest practical size is .065". Fine materials and accuracy in manufacture are necessary to assure successful use. Length depends on the work to be done.

If cleaning tiny drilled, tapped or cored holes is your problem, we can assist you. Send print or sample part with letter outlining the result desired. Our research and know-how costs only your effort to contact us.

write today — Illustrated Bulletin on Request

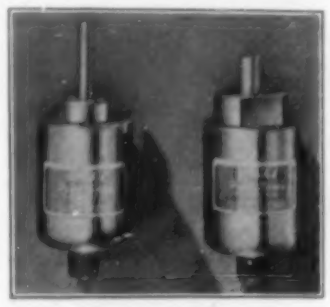
HIGH PRECISION INDUSTRIAL BRUSHES TWISTED IN WIRE

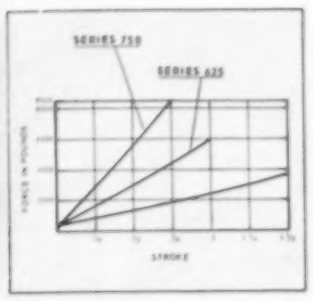
The MILL-ROSE Company 1995 EAST 59th STREET, CLEVELAND 3, OHIO

If you write maker identify as IEN - 493

PRESS TOOLS . . Hydraulic spring, compressible fluid, for stripper duty

Source: WALES-STRIPPIT CORPORATION
361 Payne Ave., North Tonawanda, N. Y.





Line includes tension and compression units

Two new Series, 625 and 750, have been added to the Hydra spring line previously described IEN-482-53. Both are designed for preloading at about 500 pounds. One builds to 6,000 lb. on 1 in. of compressing movement. The other builds to 8,500 lb. on ¾ inch. The original spring rates 3,800 lb. on 1½ inches. All three employ the compressible fluid trade named Comproil.

Overall dimensions of the new units are 2¼ in. in diameter by 4¼ in. in length. Force and stroke can be adjusted by changing preload or volume.

If you write maker identify as IEN - 494

SANDING . . Rotating head carries brush backed abrasive strips

Source: GRINDING & POLISHING MACHINERY CORP.
2528-32 Winthrop Ave., Indianapolis 5, Ind.

The strips are split

Twelve strips of abrasive cloth are coiled upon a central spool in this new design of the company's standing head, previously described IEN-6041-51. Each strip measures 1½ in. in width. Overall diameter of the assembly is 6¼ inches. Recommended operating speed is to 3,500 rpm.

The strips are brought out radially, each in front of a backup brush secured in the outer shell of the assembly. The brushes support the strips, force them into depressions and permit them to retract over projections for uniform finish on irregular surfaces.

If you write maker identify as IEN - 495

Motors, manufactured by Brook Motors, Ltd. in England, are now available from stock in the United States through Brook Motor Corp., 3557 W. Peterson Ave., Dept. IEN, Chicago 45, Ill. The line includes single and polyphase units in ratings from 1 to 50 hp. in open drip proof, splash proof, totally enclosed non-ventilated, and totally enclosed externally fan cooled assemblies. Ball bearings are standard construction. The company has prepared an illustrated bulletin covering the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

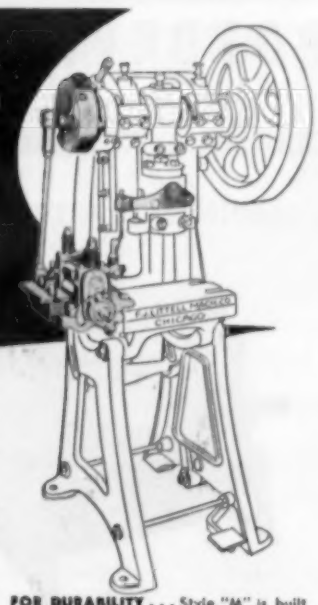
If you write maker identify as IEN - 496

FOR LOW COST AND BIG RESULTS
Feed Your Presses With

LITTELL

STYLE "M" AUTOMATIC

ROLL FEED



FOR SPEED . . . With Style "M" automatic feeding your press can easily produce 9,000 stampings an hour at 200 strokes per minute, or 4,600 stampings an hour at 100 strokes per minute.

FOR VERSATILITY . . . Style "M" feeds left to right, right to left and front to back. Feed direction can be reversed by simply reversing clutch. Feed lengths per stroke are 0 to 4⅜" with standard gears and 0 to 8½" with compound gears.

FOR ADAPTABILITY . . . Style "M" is adaptable to any standard punch press. It feeds coil stock up to 8" wide and up to .055" thick (17 gauge).

FOR SAFETY . . . Style "M" automatic feeding keeps hands and fingers away from danger, prevents costly accidents.

FOR DURABILITY . . . Style "M" is built with hardened and ground feeding rolls and the other quality features that have made Littell Roll Feeds accurate and durable since 1918.

FOR ECONOMY . . . Style "M" brings you a big saving in price. It gives your presses the lowest insurance rate. It cuts your cost per stamping by multiplying press output.

WRITE FOR CATALOG

F. J. LITTELL MACHINE CO.
Speed with Safety

ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 497

Problem:

How To Seat More People

Answer:

SICO *System*

Industry's overcrowded cafeterias and working areas cannot seat increasing numbers of people by adding ordinary tables. The best solution to the problem is more *space*—the kind of space possible with portable SICO B-Y Table and Bench Service. SICO B-Y units seat more people with more comfortable leg and elbow room than any other practical system—increasing comfortable seating capacity by 33% in some rooms!

Durability-constructed of tubular steel, SICO B-Y units feature tough, wear-resistant top, detachable benches and "Floating Fold" action. B-Y tables are completely portable, fold and unfold without pinching fingers, toppling over or marring floors.

Other portable SICO tables—the LB, with "Floating Fold," without benches—and the smaller TIP-TOP with benches—are also efficiently comfortable. See your nearest SICO distributor or write *today* to

Seating inc. 6045 Pillsbury Avenue South, Minneapolis 19, Minnesota

If you write maker identify as IEN - 498

ACCURACY AND SPEED

With the Loomis 20 Ton Hydraulic Press

Sturdy construction combined with utmost flexibility to fulfill your diversified requirements for Research, Development, Control and Production

Hand Wheel adjusted head 9" x 9" working platen area 22⅜" maximum adjustable daylight Guided Platens

The following are optional:

Electrically heated, steam heated or combination electrically heated water cooled platens Temperature Controls Adjustable multiple openings Auxiliary low pressure gauge with safety shut-off valve

Its applications include: Plastic and rubber compression and transfer molding; plastic lamination, ceramic and powdered metal pressing; ceramic porosity testing; metal forming. This Press is also furnished in 30 Ton capacity, and with 14" x 14" platens. For further information, write for bulletin 341A.

LOOMIS ENGINEERING & MFG. COMPANY
126 SOUTH 14th STREET, NEWARK 7, NEW JERSEY

If you write maker identify as IEN - 499

Really Free Turning
BALL BEARING SWIVEL FITTINGS

EMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES
FITTINGS AND PRESSURES TO 15,000 P.S.I. AND TEMPERATURES TO 750° F.

Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U. S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with teflon ideal for corrosive service. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at right, threaded, flanged or weld ends.

EMSCO

EMSCO MANUFACTURING CO.
LOS ANGELES, CALIF.
Houston, Tex. Garland, Tex.

If you write maker identify as IEN-500

STOP LOSSES
due to

CORROSION, ABRASION, CHIPPING, PITTING of metal parts and products in transit, storage, and manufacture with

Thermo-Cote

THE STRIPPABLE PLASTIC ARMOR FOR METAL PARTS

DIPPING

STRIPPING

One quick dip gives you quick, low-cost protection for metal products and parts. Protects against rust, most atmospheric conditions, salt spray, dilute acids, abrasion and moderate impact. Tough, pliable Thermo-cote, the strippable protective coating, clings to metal with an air-tight grip, yet peels off quickly when part is needed for use. Reduces packaging cost because it forms a complete inner wrapping. Eliminates scratching and nicking due to handling in shipping, manufacture or storage. We'll gladly send a sample of Thermo-cote for you to try in your own plant . . . or coat your product sample here and return it with quotations.

FREE! WRITE TO-DAY FOR ILLUSTRATED BULLETIN.

ERNST Bischoff CO., INC.
PLASTICS DIVISION
104 Main Street, Ivoryton, Conn.

If you write maker identify as IEN-501

first* IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approvd for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

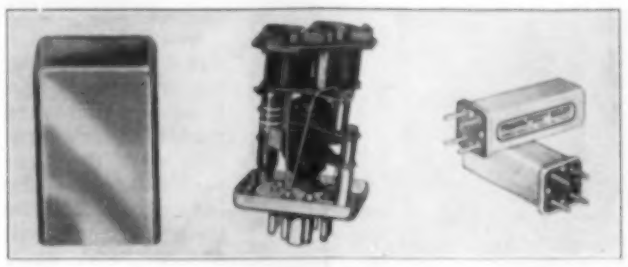
*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 · NEW YORK 7

If you write maker identify as IEN-503

CONTROL . . Resonant reed oscillators to actuate reed relays selectively

Source: JAMES G. BIDDLE COMPANY
1314-18 Arch St., Philadelphia 7, Pa.



Bulletins 34-10 and 33-10

The company announces a new series of standard oscillator units to match its standardized line of resonant reed relays, previously described IEN-7353-52. The new oscillator controls are, in effect, miniature tuning forks to provide stable output frequencies at any point in a range between 50 and 1,000 cps. Accuracy is within 0.1 per cent.

Construction includes two alloy steel reeds mounted on a bar to form the vibrating element. The bar is isolated from the base by a suitable rubber mount. A drive coil is placed around one reed and a pick-up coil around the other. In one type, a coupling capacitor is also connected and mounted internally.

Application of the relays and oscillators include controlling, signaling, monitoring, protection, frequency matching, selective calling. These functions apply in speed control for motors, generators, turbines, to turn street lights on and off, to open and close doors from remote locations. Signaling applications are in mobile communication equipment for selective calling, in communicating equipment and selective telephone ringing. Remote information can be telemetered, power line outage monitored.

If you write maker identify as IEN-504

TESTING . . Electronic oscillator, power source for bridge measurements

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.

Employs Type 5763 tube

Unit oscillator Type 1211-A is a new instrument in the company's line with a frequency span of 0.5 to 50 mc. in logarithmic ranges from 0.5 to 5 mc. and from 5 to 50 mc. In the first range, the output power is in excess of 1 watt. In the second range it is approximately 200 milliwatts.

Frequency is indicated on a 6-in. dial and approximate increments are shown in percentage on a 3¼-in. slow motion drive dial. Construction provides effective shielding. The Type 874 coaxial output connector permits extension of the shield to the bridge. Type 1203-A unit power supply is employed for ac. operation. Batteries can be used for field application. The oscillator lists at $295. The Type 1203-A power supply adds $40.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-505

On the ball for Quality

HOOVER BALLS
steel · brass · bronze
monel-metal
stainless steel

AMERICA'S FOREMOST BALL MANUFACTURER
HOOVER BALL AND BEARING CO.
ANN ARBOR, MICHIGAN

If you write maker identify as IEN-506

WHAT IS YOUR CLUTCH PROBLEM

There is no one stock answer to every power transmission control problem. That is why ROCKFORD clutch engineers can be of practical help in designing applications that will increase your product's efficiency — make substantial savings in cost — and reduce servicing down-time. Send a print or a description of your clutch need for their recommendations — based on many years of clutch application experience and the extensive ROCKFORD line of clutches, power take-offs and speed reducers.

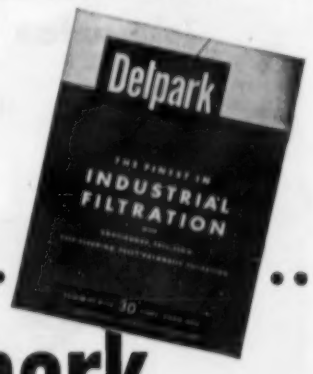
Send for This Handy Bulletin
Shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS. Contains diagrams of unique applications. Furnishes capacity tables, dimensions and complete specifications.

ROCKFORD CLUTCH DIVISION
Borg-Warner
505 Catherine St., Rockford, Illinois

ROCKFORD CLUTCHES

If you write maker identify as IEN-507

free Bulletin



ON Delpark

FULL FLOW, SELF CLEANING
INDUSTRIAL FILTRATION

Here's literature that can help you solve filtration problems in your plant.

The famous Delpark Industrial Filter is designed for the maximum of filtration with the minimum of maintenance.

Full flow, self cleaning, continuous, fully automatic, Delpark Industrial Filter applications include the filtration of coolants, quenching oils, paint spray-booth water, air-conditioning wash water, and numerous other applications.

Write today for this free booklet and acquaint yourself with the facts on the finest in Industrial Filtration.

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INDUSTRIAL FILTRATION COMPANY
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If you write maker identify as IEN-508

Drill holes faster ...more accurately WITH A KELLER AIRFEEDRILL

The Airfeedrill is a fully automatic pneumatic drill that operates through a complete drilling cycle by simply pressing a control valve. It brings big savings in production costs.

Accurate holes without costly fixtures

Entirely air-controlled and operated

Easily shifted from job to job

Attaches in any position, at any angle

Pneumatic cycling to speed production

Drills metal, wood, composition, plastics

Used in close centers, and in tight places

Send for illustrated descriptive bulletin . . . "The Hole Story"

KELLER TOOLS

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-509

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso • Indiana

If you write maker identify as IEN-510

Take surface temperatures quickly, accurately... with the

The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN-511

Take the GLARE out of Micrometer Reading with the "Lustro-Chrome" MICROMETER

MEASURE TO 1/10,000 th

ALL GRADUATIONS ARE WELL-DEFINED BLACK LINES ON DULL CHROME SURFACE WHICH MEANS EASIER AND SURER READING, EVEN IN POOR LIGHT.

GUARANTEED ACCURATE WITHIN ONE HALF OF A TEN THOUSANDTH OF AN INCH.

THE CHROME SURFACE IS EXTREMELY HARD AND NON-PEELING. IT PROTECTS THE TOOL INDEFINITELY FROM RUST AND DISCOLORATION.

DROP-FORGED MODEL WITH CHROME FINISHED MICROMETER HEAD, 10th VERNIER, FROM $9.25 UP.

No. 901 C 0-1" size with LOCK NUT and RATCHET and 10th vernier as shown $13.25

This tool with TUNGSTEN CARBIDE tipped anvils $15.75

Dealers! Here's a real profitable line

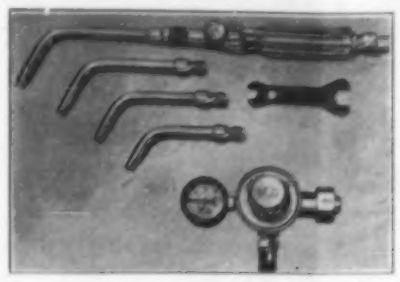
ASK FOR CATALOG ON OUR COMPLETE LINE OF MICROMETERS IN ALL SIZES.

GEO. SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200 -EN LAFAYETTE STREET • NEW YORK 12, N. Y.

If you write maker identify as IEN-512

HEATING . . Air acetylene torch for brazing and soldering operations

Source: NATIONAL CYLINDER GAS CO.
840 N. Michigan Ave., Dept. IEN, Chicago 11, Ill.



Bulletin Form N-117 P/L

Sod-R-Braze is a new assembly consisting of a torch, tips, hose and pressure regulator for operation with the company's 40 cu. ft. acetylene cylinder. The torch can be employed to braze with silver or copper alloys, to solder and for utility heating. It is suited for work on sheet metal, pipe, tube, electrical apparatus, automotive and electrical equipment. It will silver braze a 1/16-in. copper tube to a brass fitting in about 38 sec. and will solder the same type of joint in about 26 seconds.

The flame can be turned on and off and adjusted or left to burn in a pilot light. The plastic handle is grooved.

If you write maker identify as IEN-513

CONNECTOR . . Terminal junction box primarily for use on plant equipment

Source: SQUARE D COMPANY
4039-43 N. Richards St., Milwaukee 12, Wis.

For machine tools

Eight sizes have been standardized in this new line of junction boxes. The largest takes 168 terminals, each rating 25 amperes. Fifty and 100-amp. terminals also can be used in combination with those rating 25 amperes. The terminals are mounted on removable strips assembled forward from the back of the enclosure to provide wiring space behind them.

The steel enclosure is fitted with a gasketed hinged door to keep out oil and coolant. Mounting flanges are external. Knock-outs have been eliminated so the user can drill his openings for wire entrance at desired points. The enclosures and terminals are available separately to carry in stock.

If you write maker identify as IEN-514

Duracite is a floor resurfacing material with slipproofing ability combined with a high degree of hardness to take heavy traffic. It has been used with considerable success over a period of years. Now it is finding new uses such as grouting under machines where its 6 to 8-hr. drying interval permits the machines to go to work with little delay. It also is being applied to resurface worn, splintered, stained laboratory tables as well as tables in shipping rooms where the hard surface is an advantage. The material is shipped as a dry powder in sealed drums. It is mixed with water and applied with a trowel. It can be feathered to 1/8 in. in thickness. Manufacturer is Duane Specialties Ltd., 209 Parkhurst St., Dept. IEN, Newark 5, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-515

SAVE YOUR TIME! Order directly from this Ad, give: Tool No. and Centerline angle desired. Thus: 12 only CB-30°; 24 only GD-41°; etc.

TOOL Nº	DIAMETER	SHANK DIA	* PRICE
CB	1/4	3/16	1.30
EC	3/8	1/4	1.85
GD	1/2	3/8	2.40
JF	3/4	1/2	4.60
LI	1	1/2	7.00
PK	1 1/2	3/4	13.65
SM	2	1	20.50

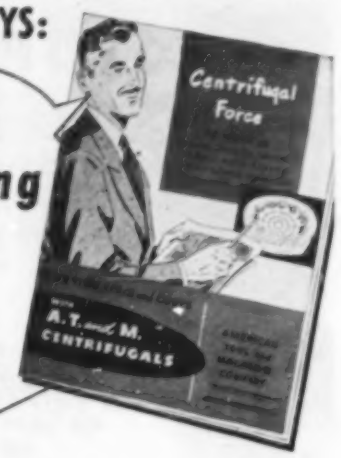
* PLUS 10% IN LESS THAN 10 OF ANY ITEM

Severance TOOL INDUSTRIES INC.
740 Iowa Avenue • Saginaw, Michigan

If you write maker identify as IEN-516

SAM SPINNER SAYS:

Get these money-saving facts on YOUR processing!



If you use any of these processes:

Separation . . . Extraction . . . Impregnation . . . Coating . . . Precipitation . . . Draining . . . Dehydration . . . Thickening . . . Sedimentation . . . Filtration . . .

here's a free booklet packed with information on how you can literally *spin* your way into faster, better processing at lower cost. AT&M's booklet, "Centrifugal Force," brings you eight pages of illustrated facts showing why centrifuging is replacing older processing methods in all types of industry. Learn how you can cut your own production time and costs with modern AT&M centrifugals. Write for your free copy of "Centrifugal Force" to American Tool & Machine Company, 1417 Hyde Park Ave., Boston 36, Mass.

SAVE TIME, SPACE AND COSTS WITH

A.T. and M.
CENTRIFUGING

If you write maker identify as IEN-517

HAND HYDRAULIC PUMP

Single and Double Designs To 20,000 P. S. I.

Interchangeable Pistons 3/8-1/2-3/4 inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 Cu. in.

Pressure range is 3,000 to 20,000 P.S.I. Pipe connections 1/4" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position. We specialize in hand pump units to operate in temperatures from minus 65° F. to 160° F. and with any capacity reservoirs required.

The single pump with 1/2" or 3/4" piston now available in stainless steel.

WILLIAM S. PINE
1637 E. 22nd Street, Los Angeles 11, Calif.

If you write maker identify as IEN-518

Speed up ► RESEARCH ► BUYING ► PRODUCTION

GET INTO THE MASTER HABIT!

$1.95 at your parts distributor Publisher's price $6.50

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- Over 95,000 items
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Over 100,000 in active daily use. Get into the Master habit. Order your copy today!

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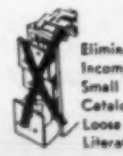


Eliminate Incomplete Small Catalogs and Loose Literature

UNITED CATALOG PUB., INC. 110 LAFAYETTE ST. NEW YORK 13, N. Y.

If you write maker identify as **IEN - 519**

Keep your plant cleaner with

INVINCIBLE VACUUM CLEANERS

Invincible Light, Portable—1½ H. P

These Invincible features insure outstanding performance: 1. Multi-stage turbines produce plenty of power. 2. Positive Separation precedes vacuum producer. 3. Reach *every* surface with attachment tools. 4. Also recover scores of industrial materials. 5. Compact, portable; no interference with production. 6. 15 models from ½ to 5 H.P. 7. Larger models can be operated continuously. 8. No dirt or abrasives ever touch moving parts . . . *Over 100,000 Invincibles in use—5,000 for over 25 years. Send for free bulletin.*

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

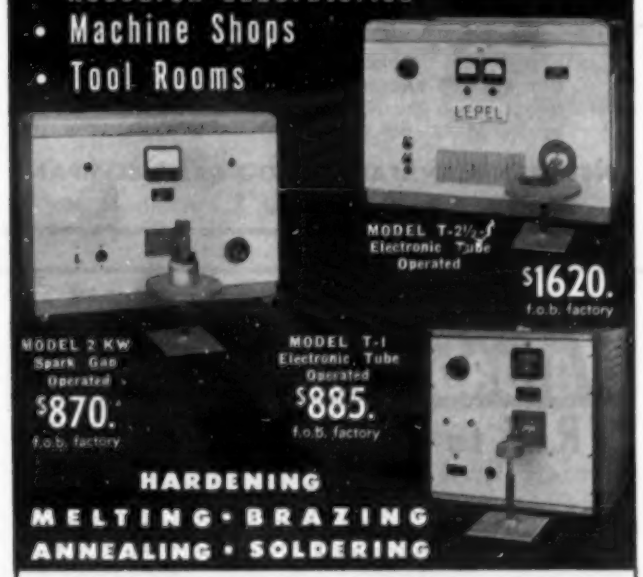
If you write maker identify as **IEN - 520**

Lepel's 3 new

LOW COST • PORTABLE
HIGH FREQUENCY
Induction
HEATING UNITS

Ideal for . . . .

- Production Heating of small parts
- Educational Institutions
- Research Laboratories
- Machine Shops
- Tool Rooms



HARDENING
MELTING • BRAZING
ANNEALING • SOLDERING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of pioneering electrical and metallurgical experience, the name Lepel has become the symbol of induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

Amazing in its speed, Lepel equipment reduces the time required for hardening, annealing, stress relieving, brazing, soldering and melting from minutes to seconds. It performs these operations with a degree of precision and uniformity rarely attained through other processes.

LEPEL Electronic Tube GENERATORS available from 1 kw. to 100 kw.
LEPEL Spark Gap CONVERTERS available from 2 kw. to 30 kw.

WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information on high frequency induction heating.

All Lepel equipment is certified to comply with the requirements of the FCC.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as **IEN - 522**

PROTECTING . . Transparent holder for instructions, orders, notices

Source: COOK'S INCORPORATED
780 Wright Ave., Dept. IEN, Camden 1, N. J.

Catalog 253

Transparent plastic is employed on the two faces of this new Ful-Vu plastic holder. Steel channels are secured at the top and bottom. An eye on the top channel hangs from a nail or hook on a wall. The plastic enclosure is open on one side so sheets or cards can be slid into position. Sizes range from 5 by 7 in. to 18 by 24 in., based on the sheet that the unit will take. List price is 30 cents to $1.50. Packaging is 25 to 10 units depending on size. Package weight is ½ to 5 pounds.

If you write maker identify as **IEN - 523**

CLEANING . . Antiseptic cream for waterless use on worker's hands

Source: WEST DISINFECTING CO.
62-18 West St., Long Island City 1, N. Y.

Cleans and protects

Sulpho designates a new antiseptic waterless hand cleaning cream for use by workers on the job and also for protection, at any time, for those with naturally dry or sensitive skin. It will not cause drying out or chemical change in the skin. The cream is made of sulphonated vegetable oils. It contains a relatively large amount of unsulphonated oil which acts as an emollient.

If you write maker identify as **IEN - 524**

TRUCK . . Shelf type hand unit for books, merchandise, stationary

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.

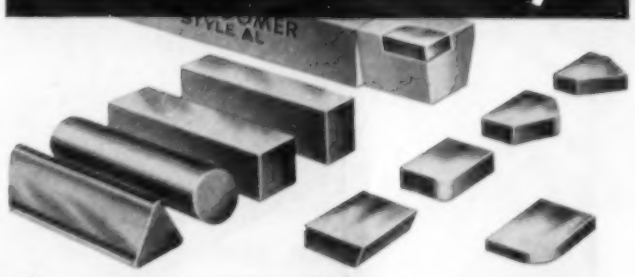
For store rooms

Dimensions of this new No. 275 Book Truck are 24 by 18 by 39 inches. The two ends extend 6 in. above the top shelf and the shelves are spaced 12 in. apart. Mounting is on 5-in. casters with soft rubber treads. Two are stationary and two swivel. Steel parts are in welded assembly. Finish is olive green or gray baked enamel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 525**

NEWCOMER CARBIDES
Controlled Quality



for greater Production Economy

From start to finish, NEWCOMER CARBIDES are made in our own plant . . . to high controlled-quality standards.

NEWCOMER CARBIDES are made to give you greater production economy through heavier feeds, faster cutting speeds and greater wear resistance than most other carbides. Complete stocks of standard carbide blanks, cutting tools and mechanically held tools are available for ready delivery.

For your particular cutting problem, consult a Newcomer Tool Engineer . . . there's one located near you.

NEWCOMER PRODUCTS, INC.
LATROBE, PENNSYLVANIA
General Sales Office: 512 Franklin Ave., Pittsburgh 21, Pa.

If you write maker identify as **IEN - 526**

NO SHUDDER... NO SHAKE

With HYDRO-SHEAVE® Fluid Drive

Electric motors perk up, drive gears and driven equipment settle down to smooth performance — when Twin Disc's famous HYDRO-SHEAVE Drive soaks up shock loads . . . allows motors to come up to to effective speeds to start heavy loads . . . levels current surges. Ask your local Authorized Twin Disc Hydraulic Dealer to help eliminate *your* "shudders and shakes."

Sizes for motors and engines from ¾ to 50 hp.

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TOLEDO

If you write maker identify as **IEN - 527**

CORRUGATING

Fast and Easy

Large corrugations are made singly and smaller corrugations several at a time with Steelweld Presses. This work can be done to hairline accuracy. With proper dies the corrugated metal will not curl; the corrugation tops will lie in a flat plane.
The press illustrated will corrugate metal in lengths to 10 feet between housings of machine. Other Steelwelds in sizes to 750 tons will handle lengths to 20 feet.

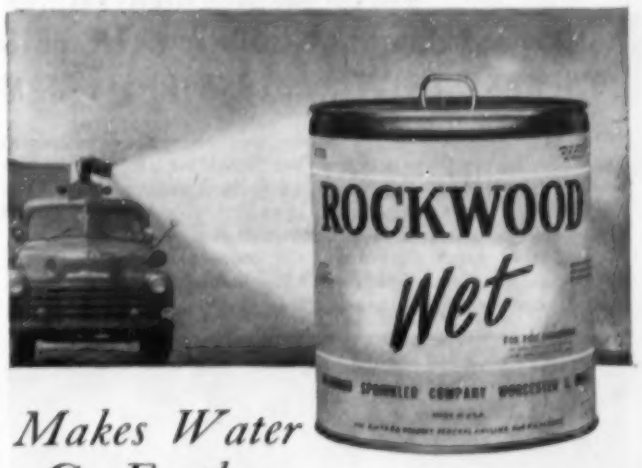
STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4234 East 281st St., Wickliffe, Ohio

STEELWELD PRESSES

If you write maker identify as **IEN - 528**



Makes Water Go Farther

Rockwood WET — a liquid prepared especially for fire-fighting — increases the spread and penetration of water. Used in solution of 1 part WET and 99 parts ordinary water.

Recommended for fires involving ordinary combustibles such as wood, paper, cloth. And excellent for use with WaterFOG where water is extremely scarce for fire-fighting — such as rural residences, barns, forest and grass fires, factories in outlying districts. Rockwood WET carries water into deep-seated fires in stumps, piles of leaves, duff and other spots where fires might smolder after flames have been extinguished — and where wind could fan smoldering embers into another open fire. With WET, such rekindling is reduced. Also excellent for dust control purposes.

Write for *"Fire-Fighting Products,"* Rockwood's illustrated catalog. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as IEN-529

"BIG SAVINGS OF LABOR AND MATERIAL"

with portable Greenlee Hydraulic Conduit Bender

Quickly produce your own conduit bends *right on the job*. With a GREENLEE Bender *one man* in but a few minutes makes smooth, *accurate* bends in pipe up to 5", rigid and thin-wall conduit. Many owners report time and labor savings from 50% to 90% . . . and cost of many manufactured bends and fittings completely eliminated. Get facts now on this tool that often pays for itself on the first job.

FREE BENDER BOOKLET with complete data on GREENLEE Benders for pipe, conduit, tubing. Write today, Greenlee Tool Co., 1861 Herbert Ave., Rockford, Illinois.

If you write maker identify as IEN-530

SPECIFY *Abart* SPEED REDUCERS *for* SAVE

IMPLICITY
CCURACY
ERSATILITY
CONOMY

Efficient, durable, compact—ABART Speed Reducers are precision built to (1) give accurate reduction ratios (2) cut your production costs, and (3) provide years of maintenance-free service. Over 75 types and sizes (spur, worm, and combination). Ratings from 1/50 to 168 hp., with ratios up to 10,000 to 1.

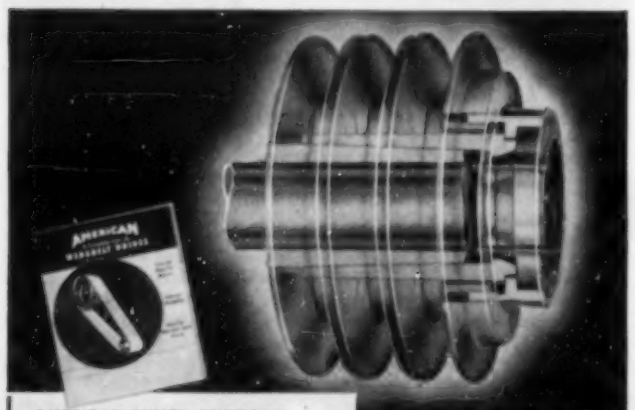
Send for free, pocket-size catalog for complete information and engineering data on the ABART line of speed reducers and gearmotors.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers • Bishop 2-2524

If you write maker identify as IEN-531

ADJUST SPEED IN A HURRY WITH THIS LOW-COST DRIVE . . . TO A SPLIT RPM

With this low-cost American Adjustable-Speed Drive you can change driven speeds as much as 100%! A simple screw adjustment on the sheave changes its effective pitch diameter quickly, easily . . . permits you to obtain optimum driving speed for any operation; synchronize production lines; compensate for variations from rated motor speeds or calculated speeds of belt drives. Widely used in textile, chemical, mining and many other industries. Write today for free catalog. No obligation.



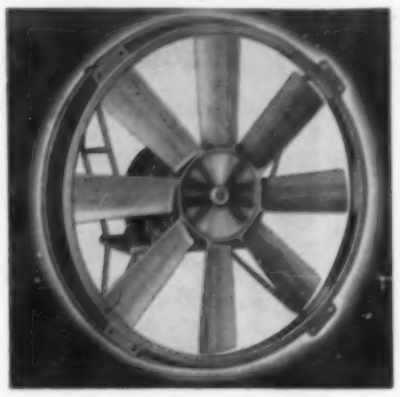
AMERICAN PULLEY COMPANY
4240 Wissahickon Ave., Phila. 29, Pa.
Please send me the American Adjustable-Speed Drive Catalog.
Name _____
Title _____
Address _____
City _____ State _____ Zone _____

At the profit end of the machine
Power Transmission by **AMERICAN PULLEY COMPANY**

If you write maker identify as IEN-532

VENTILATING . . High pressure fan is motor driven in an orifice ring

Source: HARTZELL PROPELLER FAN CO.
1023-27 Roosevelt Road, Piqua, Ohio



For general duty

Three diameters are 28, 36 and 48 in. for this new motor driven fan. It can be employed against pressures to 4 inches. Its cast aluminum propeller is machined, ground, polished and mounted in a fabricated steel ring. The motor is assembled on a vibration absorbing support at the rear designed to minimize obstruction to the air stream. Tests indicate that the curved orifice air sealed ring is responsible for 10 per cent of the air delivery capacity by eliminating back flow at the propeller tips.

If you write maker identify as IEN-533

GAGE . . Dial micrometer reads in thousandths to ½ inch

Source: TESTING MACHINES INC.
123 W. 64th St., Dept. IEN, New York 23, N. Y.

Accurate to 0.0005 inch

Model 553 is new design in the company's line of dial type micrometers, previously described IEN-3680-42. The new unit mounts a 6-in. dial and is provided with a zero adjustment. The measuring spindle is raised to insert a work piece. It rests upon the work with a standard load of 8 lb. per square inch. Other loads and anvil sizes can be specified. Applications are in measuring thickness of metals, plastics, paper, leather. It is characterized by its resistance to vibration.

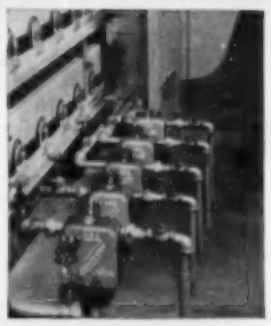
If you write maker identify as IEN-534

Industrial refrigerating equipment now finds application in a new form in connection with surgical work in hospitals. A unit, particularly designed for use prior to amputation of infected human limbs, has been developed by Webber Mfg. Co., 2740 Madison Ave., Dept. IEN, Indianapolis 3, Ind. A limb can be properly refrigerated in two to three hours. The equipment consists of an electrically operated refrigerating unit in a small portable sound proof cabinet and a freezing unit into which the affected limb is placed through a small opening. Connection is by insulated tubing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-535

In MODERN *Steam Traps, too*



Gadgeteering is a thing of the Past

A noteworthy example of improvement through simplification in steam specialties is to be found in Drainator — the modern steam trap.

All gadgets such as floats, valves, levers, etc., have been eliminated. The flow of condensate and non-condensable gases is ingeniously controlled by the thermodynamic properties of the condensate.

Elimination of these parts which cause breakdowns and necessitate repairs assures continuous operation at high efficiency and low cost.

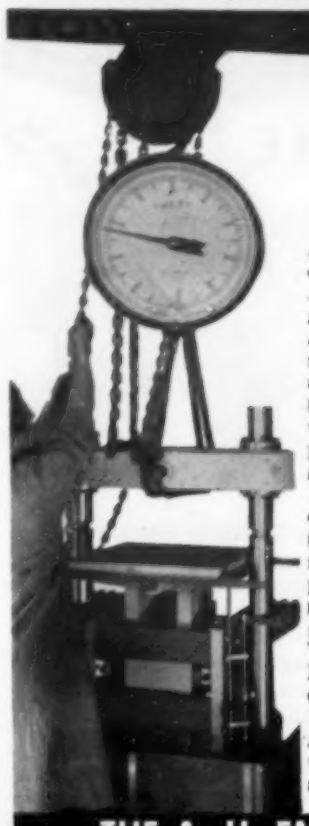
Write for literature.

The COE MANUFACTURING CO.
504 BANK ST. PAINESVILLE, OHIO

If you write maker identify as IEN-536

WEIGH . . .

MORE EFFICIENTLY
with the All New
EMERY CRANE SCALE CS-10



A truly efficient materials handling tool combining Laboratory Accuracy with Freight Yard Ruggedness.

Accurate — 2/10 of 1% of scale capacity. 20% tare weight adjustment.

Reliable — Rugged unit in weatherproof case. No delicate parts. Unbreakable dial crystal.

Minimum Head Room — Only 19⅛ in. additional height required.

Readable — 21½ in. dial tilted forward 15°. Exclusive "bifocal" pointer.

Economical — No knife edges, no sticky seals, no bearings: NO WEAR. No maintenance needed. Model CS-10 comes in capacities of 10,000, 5,000, 2,000, and 1,000 lb.

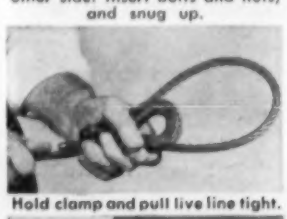
Send Today For Bulletin 532, which gives complete information and prices.

THE A. H. EMERY CO.
CRANE SCALE DIVISION
NEW CANAAN 7, CONN.

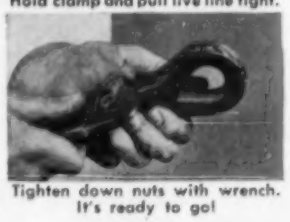
If you write maker identify as IEN-537

Easier to Install than Any Other Wire Rope Clip, Grip or Thimble - Newco Wire Rope Clamp

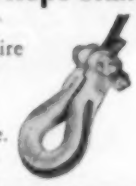
Thread out from one side, into other side. Insert bolts and nuts, and snug up.



Hold clamp and pull live line tight.



Tighten down nuts with wrench. It's ready to go!



The Newco Wire Rope Clamp always goes on right; there is no wrong side. That's why it's so easy to install. The entire assembly consists of two sections, bolts, nuts and *no clips*. No special tools required. Bolts, nuts replaced with standard hardware bolts and nuts. Once it's on, it gives maximum protection to wire rope, lasts two to three times longer than conventional clips and thimbles, reduces down time as much as 2/3. Impossible to shear bolts off. *Develops 95% to 100% of catalog list* for greater safety. Investigate now!

wire rope **NEWCO CLAMP**

GET ALL THE FACTS! Write today for complete information on the Newco Clamp . . . specifications, details, prices. See your distributor or write direct.

NEWMAN MANUFACTURING & SALES COMPANY
Dept. 101, 205 Westport Road, Kansas City 11, Mo.

If you write maker identify as IEN-538

Valuable Information

FREE to Factory Executives, Engineers and Maintenance Dept. Officials

68 Useful Pages

New Manual shows how to properly install and service Clarage fans, blowers and air conditioning units . . . valuable information adaptable to almost any type of fan job. Sent without charge to key men who qualify by writing us on their company's letterhead.

YOU CAN RELY ON **CLARAGE**

CLARAGE FAN COMPANY, Kalamazoo, Mich.
Sales Engineering Offices in All Principal Cities

If you write maker identify as **IEN - 539**

END SASH LIGHT REPLACEMENT!

Shatterproof—Crackproof Panes of Flat RESOLITE Last Indefinitely

You can install window and door lights that won't shatter when hit by flying objects; that won't crack when subjected to severe vibration, concussion or intermittant radiant heat. Translucent Resolite — a glass-fiber reinforced polyester resin—is also unaffected by weather extremes of heat, cold or moisture, and by usual industrial fumes.

That's why more and more modern plants are using Resolite for all glazing, including sidewall and skylighting.

Resolite panes are installed like glass. They are factory cut to size, but can easily be cut on the job. Resolite's uniform diffusion of daylight cuts glare, reduces eyestrain. For complete information and name of nearest distributor, write:

RESOLITE Corp., Box 514, Zelienople, Pa.

If you write maker identify as **IEN - 540**

NOW... an outstanding new line of CHESTER Electric HOISTS

MODEL E: 5 sizes, ¼ to 2 ton. Flexible wire rope-cable lift, pendent push button control. Lifting speeds 15 to 38 f. p. m.

MODEL EC: 3 sizes, ⅛ to 1 ton. Welded alloy steel link chain lift, pendent rope control. Lifts adaptable up to 66 ft.

COMPARE these new Chester Electric Hoists... for efficiency of design . . . rugged durability... quality features of motors and parts . . . and for easy, smooth operation.

Chester Electric Hoists in your plant *can pay for themselves* in a remarkably short time . . . in cutting costs of your present load lifting and spotting operations.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us now for these descriptive specification folders, E 853 and EC 953.

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

National PRODUCTS — FASTENERS, HODELL CHAINS, CHESTER HOISTS

If you write maker identify as **IEN - 542**

DRIVE . . Die cast gears and pinions for small mechanisms, timing devices

Source: GRIES REPRODUCER CORP.
402 Beechwood Ave., New Rochelle, N. Y.

To your order

Small gears and pinions, in various integral combinations with mechanical elements such as cams, hubs, spacers, flangers, shafts can be supplied to precision tolerances on die casting equipment the company has set up for this purpose. It is prepared to supply zinc alloy gears measuring to $1\frac{5}{16}$ in. in outside diameter by $\frac{1}{16}$ in. in face width. The width can be increased as the diameter decreases.

The company maintains a stock of interchangeable die elements for work where precision is not an important factor. It is prepared to manufacture tools specifically for a job in which there is sufficient quantity to warrant the tool cost.

If you write maker identify as **IEN - 543**

CLEANING . . Powdered material for metal parts washing machines

Source: IPSEN INDUSTRIES INC.
710 S. Main St., Rockford, Ill.

Work dries bright and clean

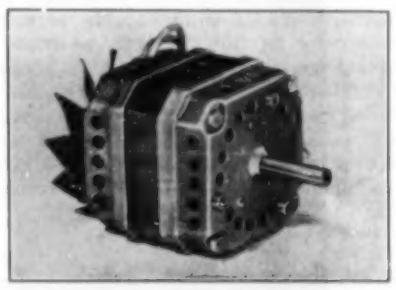
Compound 103 is a new concentrated mildly alkaline material to remove quenching oils, grease, drawing and buffing compounds from metal parts. The material will not attack a worker's skin or clothing. It will not corrode or etch finished metal surfaces. It is odorless and non-toxic.

An ounce of the powder is added to each gallon of water, in a batch or spray type washing machine, to provide an efficient active solution. Packaging is in 18-lb. polyethylene bags, two to a carton. Shipping weight is 36 pounds.

If you write maker identify as **IEN - 544**

MOTOR . . Shaded pole ac. for phonographs, business machinery

Source: ELECTRO ENGINEERING PRODUCTS CO.
609 W. Lake St., Dept. IEN, Chicago 6, Ill.

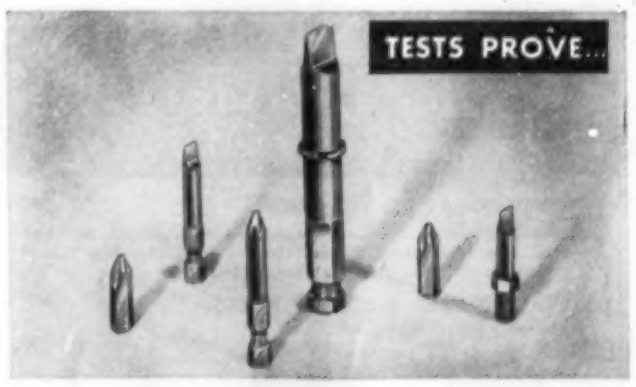


For heavy duty service

Model MS-3600 is a new 4-pole ac. motor of shaded pole design in either 2 or 4 coil construction. Its dynamically balanced motor is mounted on oil impregnated sleeve bearings fitted with oil retaining washers. Operation is on 110-volt 60-cycle ac. or, for export, on 50-cycle ac. The motor can be supplied for two speed operation to specification when this is desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 545**



HOMMEL ALL METAL BITS DRIVE MORE SCREWS!

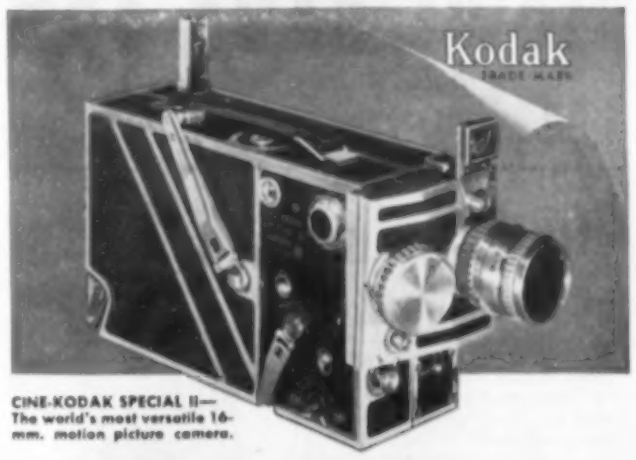
Close tolerance machining of finest, toughest shock-and-abrasion resistant tool steel is the reason — the reason Hommel All Metal power screwdriver bits outperform, outlast all others! Tests by major aircraft and automotive manufacturers actually *prove* Hommel bits last longer, cut production costs. All types and sizes are now in the Hommel line — hex drive, threaded or "Stubbies" for slotted, Phillips or Frearson (Reed and Prince) screws. Write for new catalog.

HOMMEL ALL METAL BITS

"Quite a Bit—Lasts Quite a Bit Longer"

All Metal Bit Company, 727 Penn Avenue, Pittsburgh 21, Pa.

If you write maker identify as **IEN - 546**



CINE-KODAK SPECIAL II— The world's most versatile 16-mm. motion picture camera.

Make movies that work for you!

In almost every industrial activity—engineering, manufacturing, employee training, research, safety and methods evaluation—in-plant movies are the fastest, easiest, and most effective method for putting across your story.

And for on-the-job movie making, many leading industrial companies have chosen the Cine-Kodak Special II Camera. It has the versatility to handle almost any type of job. Yet its simplicity of operation enables you to get high-caliber results almost as easily as taking home movies.

WRITE FOR FREE BOOKLET, V1-3,
describing the Cine-Kodak Special II.

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

If you write maker identify as **IEN - 547**

Inductrols ...via Graybar

Undervoltage cuts equipment output and efficiency . . . ups maintenance costs. Overvoltage shortens equipment life . . . increases manufacturing and replacement costs. But by using G-E Inductrols on secondary circuits you can automatically maintain correct voltages for all a-c electric equipment. Housed in all-steel cabinets enclosing all live parts, you can install these dry-type regulators anywhere.

FREE 2 bulletins tell complete story of dry-type induction voltage regulators

Application, construction, and operating details on the wide range of standard G-E Inductrols are covered—types for manual and automatic operation . . . single- and three-phase applications . . . units for circuits up-to-and-including 500 kva, 600 volt. Send for your free copies, today. *Graybar Electric Company, Inc., Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

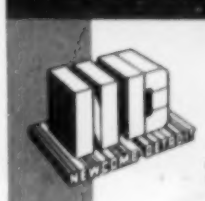
406-121

Call Graybar *first* for . . . Everything Electrical — GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 548**

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS • SPRAY BOOTHS • PARTS WASHERS • DUST COLLECTORS • HEAT and AIR SYSTEMS

ESTABLISHED 1912
- DETROIT DIVISION
- GRAND RAPIDS DIVISION
- NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN-549

NOW! SAVE 40%

on fork truck maintenance!

SpaceMaster Model "E" Electric Fork Truck

It's a maintenance man's dream! Lewis-Shepard's SpaceMaster Model "E" never wastes time at the grease rack. Exclusive "Lubricated-for-Life" Design eliminates periodic lubrication. You save up to 40% of total truck maintenance costs with sealed bearings throughout.

Here are 5 ways this revolutionary Truck saves dollars for you

- Lubrication material and labor costs eliminated
- Lubrication downtime eliminated . . . no production loss
- Insures right lubricant in bearings . . . no excessive wear
- Pre-adjusted take-up bearings are always set right
- Longer trouble-free service . . . less depreciation

Get all the facts about this exclusive SpaceMaster feature. Write or phone today!

LEWIS-SHEPARD

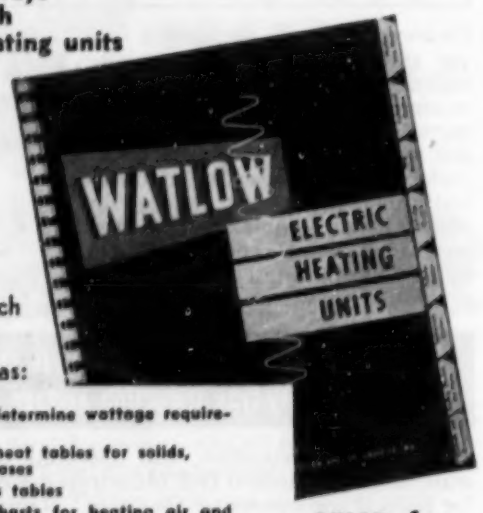
133-1 Walnut St., Watertown 72, Mass.

The "MASTER" Line

If you write maker identify as IEN-550

This FREE BOOK will show you

dozens of ways to save with electric heating units



Contains such valuable information as:

- How to determine wattage requirements
- Specific heat tables for solids, liquids, gases
- Heat loss tables
- Energy charts for heating air and water

PLUS how to select and apply Watlow's complete line of Strip, Cylindrical, Ring, Cartridge, Tubular and Immersion Heaters to meet your particular needs.

SEND for Your Copy Today!

WATLOW Since 1922—Designers and Manufacturers of Electric Heating Units

ELECTRIC MFG. CO.

1370 FERGUSON AVE.

SAINT LOUIS 14, MO.

If you write maker identify as IEN-551

FOLEY FILED SAWS Pay big dividends . . . . . HERE!

Only the best saw sharpening can give you top-speed production. The Foley Saw Filer quickly puts old saws with dull and irregular teeth back in perfect condition — and keeps them perfect 25% to 40% Increase in production is frequently realized with Foley-filed saws.

ONE machine files crosscut circular saws, band saws, hand saws.

30 DAY TRIAL OFFER permits you to use a Foley Saw Filer in your own shop. You can't lose on this offer—write or send coupon.

FOLEY Automatic SAW FILER

FOLEY MFG. CO. 3369 N. E. Fifth Street Minneapolis 18, Minnesota

Please send literature, and details of your 30-DAY TRIAL OFFER.

Name .....

Address .....

For Your Special Information

If you write maker identify as IEN-552

THOMAS' REGISTER . . 1954 edition lists all products and their makers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

All makers of all products manufactured in the United States, by all of the names with which the products are known, are listed and described in text and manufacturers' advertising in the new 1954 edition of Thomas' Register. It is coming from the presses now, in five volumes. It is the one source reference in which you can find the names of the makers of any product you can think of or will ever want to know about. It is all inclusive. No editor has attempted to judge what you may or may not want. It bears out the statement carried at the bottoms of the editorial columns of IEN through the year and reproduced as the caption to the illustration at the head of this item . . . "All makers of these and all other products are listed."

Three of the four volumes shown in the illustration contain the product classifications listed alphabetically, some 85,000 of them. Under each are the names of the manufacturers, their addresses and size ratings. Descriptive information and advertising define the product characteristics.

The fourth volume lists the manufacturers in alphabetical order. It includes trade names, thousands of them, also in alphabetical order with the name of the company owning each one. The fifth volume, not shown, contains a finding index by subjects. The five volumes total about 9,000 pages.

The Register serves thousands of industrial and Government executives, here and abroad. They use it to find the things they want, parts, materials, equipment, tools, supplies, to improve and expand their manufacturing processes. It provides purchasing men with complete data on sources for any product they ever will be called upon to secure. It assists in locating manufacturers of equipment in service when only a trade name or a partial title can be found. It can go to work for you if you purchase a set of the books to use at your desk for only $15 plus handling charges.

You can make reservation now, for billing later, by writing to Mr. W. C. Scoltock, Circulation Manager, at the address given in the heading of this item. Or if you prefer, you can write in the IEN item number on your reader service form and send the form to us.

Products described in IEN will be listed in Thomas' Register

If you write maker identify as IEN-553

MACHINE PARTS and BEARINGS by Powder Metallurgy

SELF-LUBRICATING BEARINGS:

Standard sizes as described in Metal Powder Association Standard No. 14-51T on (Metal Powder Sintered Bearings). Also special bearings. Write for complete information.

METAL POWDER MACHINE PARTS:

AUTOMOTIVE TEXTILE AIRCRAFT

Above are just three of the many types of metal powder machine parts we manufacture. Also manufacturing metallic friction materials and filters.

Metal powder machine parts can be purchased under several government and industry specifications. These include MIL-B-5687-A, MPA 16-52T and ASTM. B-202-45T.

If you are reviewing costs on existing parts or estimating on new construction and will send us your prints, our engineers will:

(1) Furnish you with quotations if the part is adapted to our method of manufacture.

(2) Suggest possible modification in design to effect further economies.

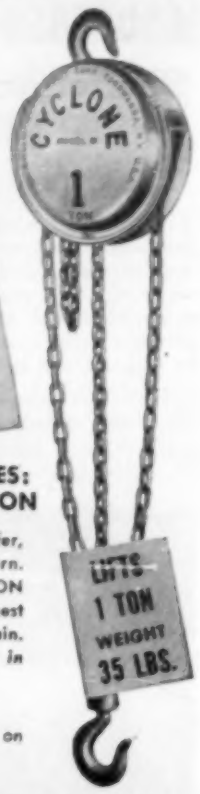
(3) If the part is not feasible in metal powder suggest other practical methods of manufacture.

Powdercraft Corp.
750 Hayne Street
Spartanburg South Carolina

If you write maker identify as IEN-554

RECEIVING...PRODUCTION... WAREHOUSE...SHIPPING... MAINTENANCE

every department can use the CM CYCLONE HIGH-SPEED—HEAVY DUTY—ALUMINUM ALLOY CHAIN HOIST



CAPACITIES: ¼ TO 10 TON

● Help your men get lifting jobs done quicker, safer, with less physical effort. Increase labor dollar return. PORTABLE—Carry with one hand. EASY OPERATION—Less hand chain pull. LOW HEADROOM—Highest possible lift. HERC-ALLOY flexible welded load chain. Lifetime lubrication. *More CYCLONE Hoists are in use today than any other hoist in their class.*

CYCLONE CATALOG NO. 145
Illustrates, describes and prices all models. Sent on request or ask your CM Distributor.

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: McKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONT.

If you write maker identify as IEN-555

SURETY Protective Aprons and Sleeves

DEEP-BOND COATING LASTS LONGER

Sureseal synthetic rubber, or Neoprene or Vinyl forced into the warp of strong fabric by Surety's Deep Bond Process.

Tests show greatly improved chemical resistance, longer wear.

Resulting in savings for you in apron and sleeve costs.

Available in both Sureseal synthetic rubber, or Neoprene or Vinyl coated one or both sides, variety of sizes.

Write for complete data and prices.

THE SURETY RUBBER CO. CARROLLTON, OHIO

If you write maker identify as IEN-556

Assure THOROUGH LUBRICATION with R. G. WHITE "REACH-EASY" OVEN CHAIN LUBRICATOR

For rollers, pins and chains

This lubricator eliminates mixing with a paddle and subsequent spillage and waste. The powerful motor-driven slow-speed agitator thoroughly mixes the graphite with the carrier even though the pail has been sitting for some time, and keeps the graphite in suspension while the lubricating is being done. No oil-can re-filling is necessary.

The 2' extension applicator tube enables the operator to reach all lubrication points without burning his hands, assuring a more thorough job.

Lubricator, less dolly, is $187.00. Dolly is $34.50, holds two 5-gallon cans.

Place your order now. Write for Pamphlet IE.

R. G. WHITE engineering co.

CUSTOM-BUILT MACHINERY *for all purposes*

1338 Atlantic Ave., Bklyn, N. Y. NE 8-6897

If you write maker identify as IEN - 557

New! SIMPLEX AV VALVE does 2 jobs:

1. STOPS PIPELINE COLLAPSE!
2. ENDS AIR ACCUMULATIONS!

Type AV Valve is a compact, combination air release and air inlet valve. It performs three separate functions:

- Admits air to break vacuums . . . prevents pipeline collapse.
- Releases air automatically to increase pumping efficiency.
- Vents large quantities of air when filling the system . . . saves buying an oversized valve.

High Discharge Capacity! 880 cubic feet of free air per minute at 10 psig, over 2200 C.F.M. at 50 psig.

CHECK THESE FEATURES! Compact! Only 11⅝" x 16¼" in size. Easy to install! One standard 2" pipe connection. Positive-acting, non-corrodible float. Tested hydrostatically to 300 psig.

Write for Free Technical Bulletin No. 1203
SIMPLEX VALVE & METER COMPANY
6717 UPLAND STREET, PHILADELPHIA 42, PA.

SIMPLEX®
VALVE AND METER COMPANY

If you write maker identify as IEN - 558

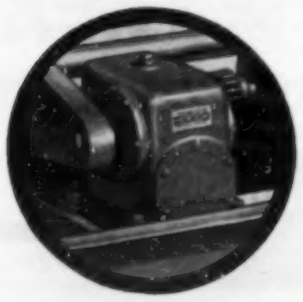
to keep work revolving at correct speeds on Reed Turning Rolls

Rotating tanks, cylinders and pipes weighing up to 2000 lbs. for welding, painting or flame cutting, this Turning Roll, manufactured by Reed Engineering Company, is quickly adjustable to handle any diameter from 3" to 6' and any length from 12" to 12'.

Powered by a ½ hp, 3-phase motor, a reversible Winsmith Worm Gear Speed Reducer, in conjunction with a variable speed drive, provides the uniform rotation needed here. Correct turning speeds are assured!

On the basis of ruggedness, compactness and freedom from maintenance, Winsmith Speed Reducers are rated first by first-rating producers of numerous types of equipment.

To fit your speed reduction requirements within the 1/100 to 85 hp range, in ratios of 1.1:1 to 50,000:1, the Winsmith line of fully standardized worm, helical and differential designs is most complete. For details, request Catalog 148.



WINSMITH, INC.
10 DAVIS ST.
Springville (Erie County), N. Y.

If you write maker identify as IEN - 560

CONSTRUCTION . . Concrete float and finishing machine takes 3 trowels

Source: MALL TOOL CO.
7735 S. Chicago Ave., Chicago 19, Ill.

Operator guides it

Gasoline engine, rating 2 hp., mounts in the center on this new Model TG-4 Pow'r Trow'l. The engine drives a 34-in. ring equipped with three 14-in. steel finishing trowels. The machine is available also with a 48-in. ring and 18-in. trowels to specification.

Control centers at a throttle and switch on the steering handle. Under this handle is an auxiliary carrying bar. It slides through a ring on the engine to pick the machine up, with an operator on each side. A tool tray, around the engine base, also takes bags of ballast when this additional weight is required on a concrete finishing job. Weight alone is 113 and 122 lb. for the two sizes.

If you write maker identify as IEN - 561

MAGNET . . Permanent design made of non-critical molded powders

Source: INDIANA STEEL PRODUCTS CO.
Indiana Ave., Dept. IEN, Valparaiso, Ind.

Developed in Holland

Indox trade names a new magnet composed of iron oxide and barium carbonate. It is characterized by its light weight and the fact that it is a non-conductor and virtually impossible to demagnetize by ordinary means. Coercive force is approximately 1,600 oersteds. The magnet can withstand demagnetizing fields of 2,000 oersteds without significant loss of magnetic flux. The company is prepared to make magnets on quantity order in specified shapes and sizes.

If you write maker identify as IEN - 562

CLOSURE . . Spring hinged door admits a screw driver into a housing

Source: CAMLOC FASTENER CORP.
24 Spring Valley Road, Paramus, N. J.

Rivets in place

Type KM-713 designates a new spring hinged access door for application in a housing at points where a screw driver requires entrance for adjustment or where a lubricator can be entered to oil or grease an enclosed bearing. The door moves back into closed position when the tool is removed. It is available at present in a single ¾-in. diameter. Other sizes can be specified on quantity order. Construction is in stainless steel. Mounting follows drilling two rivet holes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 563

we specialize in "cracking" tough nuts!

BEATTY Co-Pun-Shear — one compact unit handles coping, punching and shearing.

BEATTY Horizontal Hydraulic Bulldozer for heavy forming, flanging and bending.

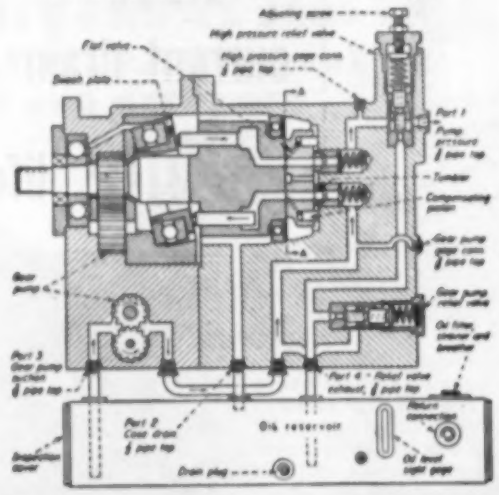
If you're confronted with a "tough nut" in the form of a metal fabricating production problem, call in a BEATTY engineer! Our men specialize in "cracking" the tough ones and our many years of experience and know-how in machine design and construction are always at your service. BEATTY machines are the answer to most production needs — they can be modified to fit, or can be custom-built to your specific requirements.

BEATTY
MACHINE & MFG. CO.
HAMMOND, IND.

If you write maker identify as IEN - 564

HEAVY DUTY HYDRAULIC POWER PUMPS

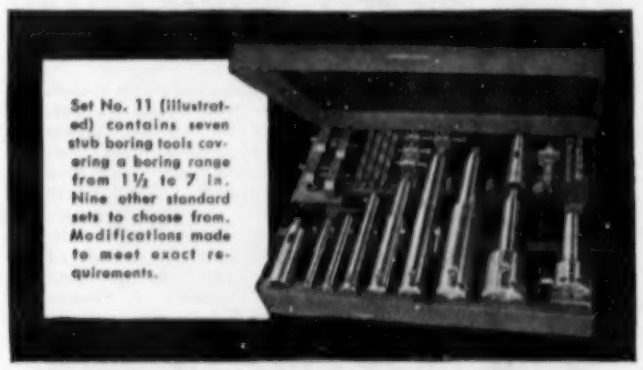
Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 565

Increase productivity — with your present machine tools



Set No. 11 (illustrated) contains seven stub boring tools covering a boring range from 1½ to 7 in. Nine other standard sets to choose from. Modifications made to meet exact requirements.

Davis "Super Micrometer" stub boring tool sets give you greater machine use, eliminate cut-and-try boring. They are extremely rugged, adjustable to .0001 in.

Speed heavy boring assignments from ⅛ to 7 in. diameter and light, extended boring up to 13 in. diameter with these high precision tool sets.

Available for almost immediate delivery, sets are equipped with high-speed steel cutters. Other cutters furnished on request. Some sets include offset boring heads, pencil boring heads and reducing sleeves . . . plus setup items.

See your representative or write for details.

If Davis can't bore it — it can't be done

DAVIS BORING TOOL DIVISION
GIDDINGS & LEWIS MACHINE TOOL COMPANY
FOND DU LAC, WISCONSIN

If you write maker identify as IEN - 566

Benchmaster Koil Kradle solves your automatic feeding problems! Handles wire or strip. Feeds to punch presses, rolls, slitters, shears, etc.

Permits any machine to draw *from a slack loop* instead of a heavy coil! As slack loop tightens, motor starts and reforms loop, switch then cuts off. Automatic adjustable timer provides shut-off delay after motor switch trips off, completing a slack loop of predetermined length.

REVERSIBLE, feeds or rewinds stock by flipping a switch! Built-in ramp eases loading. Coil rides on four hardened rollers mounted in needle-bearing pillow blocks.

Write for information! *Benchmaster Manufacturing Co. 1835 W. Rosecrans Avenue • Gardena, California*

benchmaster — World's largest manufacturer of small punch presses and mills.

If you write maker identify as IEN - 567

low current drain long life

General Controls AV-1 Series electro-magnetic shut-off valves for pressurized liquid and gas control in mobile systems come both in disc and plunger types, all light-weight, low current, continuous duty, Hi-g resistance controls. The disc type features a disc-armature developed by General Controls for positive valve operation under extreme vibration conditions and acceleration forces to 300 Gs. The plunger type features a plunger-armature design with soft seat material suitable for liquid or gas control in temperatures ranging from –65° to 160°F.

General Controls
AV-1
Electro-magnetic
Shut off valves

GENERAL CONTROLS
Glendale, California • Skokie, Illinois
Manufacturers of Automatic Pressure, Temperature Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.
FACTORY BRANCHES IN 35 PRINCIPAL CITIES
SEE YOUR CLASSIFIED TELEPHONE DIRECTORY

If you write maker identify as IEN - 568

Worth a Second Look

Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 569

The Product Engineer
CAN HELP
Keep Business Booming

SYNCHRON®
TIMING MOTORS

help the engineer by delivering dependable, lower-cost performance in a wide variety of timing mechanisms.

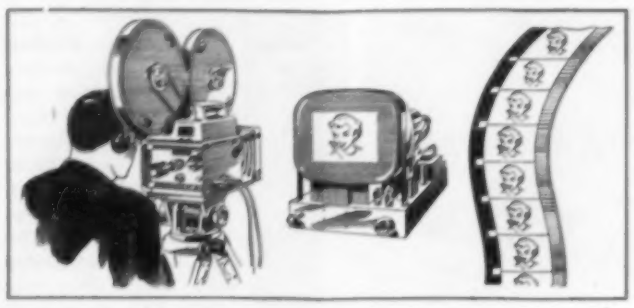
HERE'S WHY: They're versatile, compact, powerful . . . operate in any position at temperatures from –40° to +140° F. Our engineers will help with special applications. Mail coupon for catalog, engineering data.

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:
Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 570

PHOTOGRAPHING . . Motion camera records televised action and sound

Source: BERNDT-BACH INCORPORATED
7375-79 Beverly Blvd., Los Angeles 36, Calif.



40 feet per minute

Television action and sound, particularly from closed circuit industrial television receivers, are recorded by the company's Auricon Super-1200 camera with its new television transcription shutter. Film made by the camera can be kept for later viewing and study.

Camera and shutter operate to take pictures from the receiver tube, occurring at 30 frames per sec., on 16-mm. motion picture film at the rate of 24 frames per second. There is no loss in picture quality.

If you write maker identify as IEN - 571

TRUCK . . Push-pull attachment to handle dies with Power-Ox truck

Source: BARRETT-CRAVENS COMPANY
4609 S. Western Blvd., Chicago 9, Ill.

Safe and effortless

Die Puller designates a new electric powered push-pull attachment that is built directly onto the platform of the company's Power-Ox high lift electric truck. Controls center at a small hand housing on the end of an extentsion cord. There the operator employs buttons to push a die from the platform into a press or to pull it from the press onto the platform. He employs the same control to place the die in storage or to take it out for application in a press.

If you write maker identify as IEN - 572

You can purchase replacement cylinders for any make of plating barrel superstructure from Singleton Company, 5317 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio. The company has completed a line of replacement cylinders made of lucite and plexiglas. Each cylinder consists of two heads, six rails and five panels. The cylinders hold their shape permanently in temperatures to 200 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 573

Free!
PAINT INDEX

Your own guide to what kind of paint to use for every heavy-duty job. Gives you the benefit of our accumulated experience . . . 70 years of *specializing* in industrial maintenance paints. Write for your *free* copy TODAY!

THE TROPICAL PAINT & OIL COMPANY
1126-1292 W. 70th • Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883

If you write maker identify as IEN - 574

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**
Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

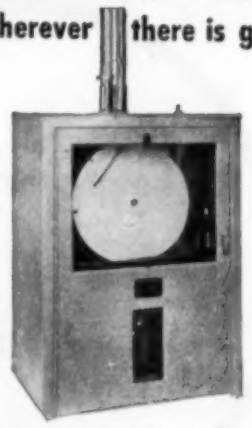
Complete Line —
For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 575

ARCCO-ANUBIS 'Dry-Air GAS GRAVITOMETERS



This new Arcco-Anubis Dry Air Gas Gravitometer determines and records specific gravity of gases automatically corrected to the humidity content of the air. The difference in weight between a column of GAS and equal column of DRY AIR is measured. This ratio represents the true specific gravity of the sample.

One bell of the instrument is filled with gas which is being measured, and the other bell is filled with dry air. Otherwise, except for the new instrument having one column for gas and one column for dry air, the unit is identical in operation to the standard gas gravitometer When calibrated and properly installed, these instruments require little attention other than to wind the clock, ink the pen, and change the chart. Send for bulletin No. 101.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

If you write maker identify as IEN - 576

The Amazing
SILENT SENTRY
Operates when a Person Comes Close to It!

STARTS . . . electrically driven mechanical devices
STOPS . . . injury — damage — theft
GUARDS . . . counters — safes — cabinets

● The versatile Silent Sentry is operated by a person coming close to but not touching the unit. Used with electrically driven mechanical devices, machines, alarms, etc., it offers unusual and mystifying effects. Ideally suited for window displays or booths where a person passing by can cause lights to turn on, turntables to rotate, trains to run, etc. It can be installed to sound an alarm when someone reaches into safes, cash registers, cabinets, tellers' windows. And, it is an excellent machine safety control device protecting operators from injury.

The Silent Sentry — which is not a photoelectric cell — costs only $49.95, is easy to install, economical to operate. Get full details NOW on this amazing unit.

G. R. Genzlinger INC.
AMERICAN SENTRY PRODUCTS
• TOCSIN PRODUCTS •

If you write maker identify as IEN - 577

Engineered Air Regulation

WHAT DO YOU REQUIRE OF AN AIR REGULATOR?

IS IT CAPACITY?

Kendall Model 10 Air Pressure Regulator gives up to 35 CFM with 90 PSI supply pressure

IS IT ACCURACY?

Increasing flow overcomes downstream line losses by jet tube venturi action in the Kendall Model 10

IS IT FREEDOM FROM SUPPLY PRESSURE INFLUENCE?

50 PSI variation in upstream pressure will result in less than 0.05 PSI change in downstream pressure on dead end service when you use a

KENDALL MODEL 10 AIR PRESSURE REGULATOR

AVAILABLE ¼" or ⅜" N. P. T.
RANGES 0-2, 10, 30, 60, 150 PSIG

Send for BULLETIN 4521

KENDALL CONTROLS CORPORATION
144 MOODY STREET WALTHAM 54, MASS.

If you write maker identify as IEN - 578

SIMPLICITY AND INGENUITY have made

American STORAGE RACKS

First Choice

here's an exclusive American feature

American Tubular Storage Racks are designed to meet practically every storage need. They are used in every type of business, large and small. Get the facts on American Racks before you decide on any type rack. Send for catalogue.

AMONG AMERICAN USERS ARE:

Atomic Energy Commission	I. B. M.
Aluminum Co. of America	Parke-Davis Co.
General Electric Co.	S. S. Kresge Co.
General Motors Corp.	Western Electric Co.

Send for Catalogue

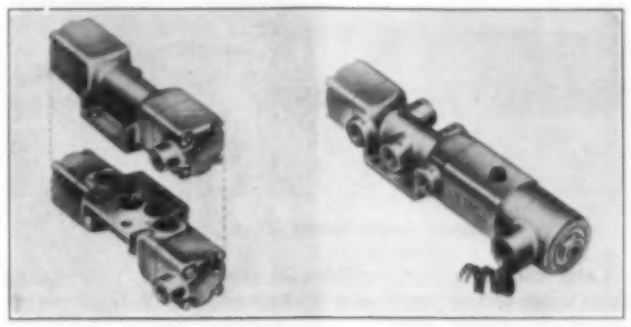
AMERICAN METAL PRODUCTS CO.

STORAGE RACK DIVISION
5959 Linsdale • Detroit 4, Michigan

If you write maker identify as IEN - 580

VALVE . . Two, three, four way controls air or liquid to 200 pounds

Source: VERSA PRODUCTS CO.
249 Scholes St., Dept. IEN, Brooklyn 6, N. Y.



Internal parts are interchangeable

New design for manifold assembly, to the left in the illustration, and new arrangement with solenoid operation, to the right, have been added to the company's line of pneumatic and hydraulic control valves. Sizes range from ⅛ to ½ inch. Pressure is to 200 pounds for either air or hydraulic fluid. Hydraulic pressures to 500 lb. can be controlled by the solenoid valve when an auxiliary low pressure line, providing between 35 and 150 lb., is supplied to the solenoid operated pilot.

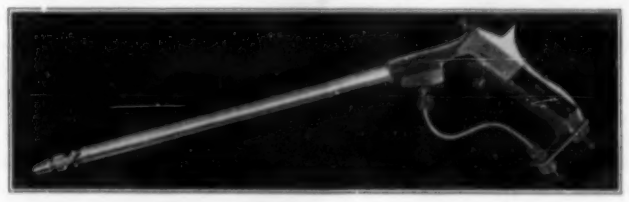
Pipe connections are made to a flat base plate on which the new manifold design is secured. O-rings ride in recesses in the valve ports to seal against leakage when the valve is in place on the plate. The valve mechanism can be supplied with spring or lever return, with cam, pressure pilot or foot operation, with spring return or to hold in set position until return action is applied by the operator.

The solenoid valve employs a small solenoid to operate a pilot which, in turn, operates the main valve. Overall dimensions of a four way assembly, in ¼-in. connection size with pilot actuation and spring return, is about 6 in. in length, 2 in. in width and 1⅝ in. in height.

If you write maker identify as IEN - 581

CLEANING . . Syphon spray gun draws solvent from original container

Source: JOHN B. MOORE CORPORATION
P. O. Box 3-G, Nutley 10, N. J



For maintenance and production

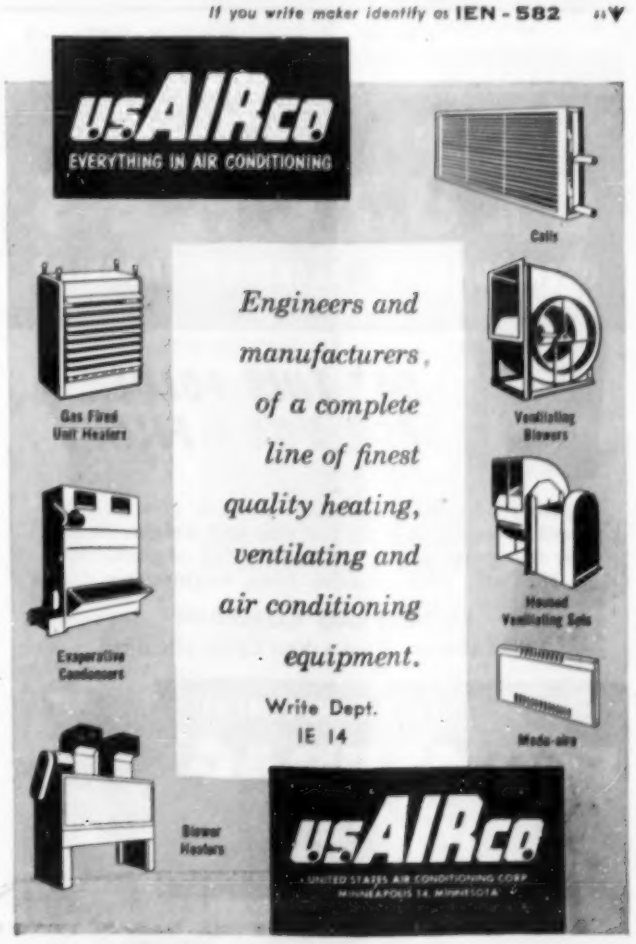
Model B-202-M is a new spray gun to apply solvents emulsions, cleaning solutions. The gun draws the fluid from a 55-gal. original container. Applications include cleaning electric motor parts and stator frames, engines, engine compartments. The nozzle can be entered into confined locations to deliver the solvent close to the points from which dirt, grease and grime are to be removed.

Construction includes a die cast handle containing a control valve, a ball check valve to prevent reverse fluid flow, and an adjustable lock tip nozzle. List price is about $20.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 582

U.S. AIR CO.
EVERYTHING IN AIR CONDITIONING



Engineers and manufacturers of a complete line of finest quality heating, ventilating and air conditioning equipment.

Write Dept. IE 14

U.S. AIR CO.
UNITED STATES AIR CONDITIONING CORP.
MINNEAPOLIS 14, MINNESOTA

If you write maker identify as IEN - 583

MEET THE CHAMP!

UNIVERSAL DRILL BUSHINGS BEAT ALL RECORDS FOR LONG LIFE AND ACCURACY

179-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 584

ONE THICKNESS WITHSTANDS 10,000 VOLTS

USCO SPLICING COMPOUND

For high-voltage work where even the slightest leakage must be avoided. Developed for the most exacting jobs required by railroads, power and communication companies.

To insure a perfect and waterproof splice, Usco® contains the finest high-grade natural rubber. High tensile strength gives added protection against mechanical abuse. Fuses readily without heat.

CHECK YOUR STOCKS. ORDER FROM YOUR DISTRIBUTOR!

Product of U.S. RUBBER — SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 585

SIGNODE time-saving strap cutters

Two of the finest strap cutters made. Both are designed to meet every demand made of them when strapping is cut in receiving rooms. Tapered foot permits easy pick-up of the tightest straps. Powerful linkage makes their use almost effortless. No. CU 25 cuts all sizes of strap through 2" x .050". Its head is designed for cutting straps to length on the floor. Blades are reversible, and easily sharpened. No. 2 strap cutter, the popular "little brother" in the Signode line of cutters, has all of the quality characteristics of the larger models. It is used for strap sizes through ¾" x .035". Ask your Signode salesman to demonstrate these cutters. Or, write for specifications and prices to Signode Steel Strapping Co., 2611 N. Western Ave., Chicago 47, Ill.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 586

H_2O anyone?

● If you need or use between 200 and 100,000 gallons per minute of clean water, find out how Cuno's FLO-KLEAN filters can save you money. In hundreds of applications throughout industry, the fully automatic, continuously self-cleaning FLO-KLEANS have paid for themselves many times over by making raw river, lake, or well water fit for industrial use—and reclaiming process water. Write for the free FLO-KLEAN bulletin. The Cuno Engineering Corporation, Dept. 692F, Meriden, Connecticut.

3.2

If you write maker identify as IEN - 587

All the *PULL* you can use is built into every *Gilmer* V-BELT

In the early days of V-belt drives, Gilmer V-Belts established a reputation for rugged dependability and long life. Constantly improved as new rubber compounds, stronger fibers and better belt-building techniques were developed, the Gilmer V-Belts you buy today are the toughest, most durable in all Gilmer history!

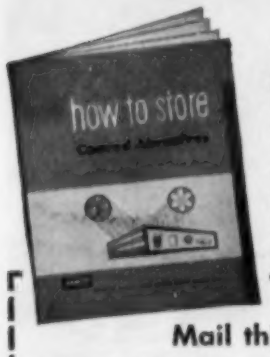
Gilmer V-Belts are made in all standard and many special sizes. Order them from your nearby, stock-carrying NYB&P-GILMER Distributor.

NYB&P NEW YORK BELTING & PACKING CO. America's Oldest Manufacturer of Industrial Rubber Products

If you write maker identify as IEN - 588

Storing Abrasives?

Armour's helpful booklet shows the economical, time-saving way!



This booklet from Armour, maker of *precision* coated abrasives, tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for your free copy of "How to Store Coated Abrasives."

Mail this coupon today

Please send booklet "How to Store Coated Abrasives."

Name .....

Firm .....

Address .....

City ..... *Zone* ..... *State* .....

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 589

CONNECTOR . . Sleeve assembly to ground braided cable shield

Source: THOMAS & BETTS CO.
60 Butler St., Elizabeth 1, N. J.

Seven bright colors identify sizes

Color coding is now standard on the company's grounding sheath connector, previously described IEN-2638-52. Seven permanent colors identify the connector sizes. The colors also correspond to those on the installing tools supplied by the company. The line covers wire and cable diameters from 0.058 to 0.297 inch. The connector is suited to terminate braided shields on wiring in radar, critical radio, audio frequency and ultra high frequency circuits.

An inner sleeve applies between the conductor insulation and the shield braid. The outer sleeve slips over the braid. The grounding wire, or lug, lies between the outer sleeve and the braid. The special tool clamps the outer sleeve down, forms it into a hexagon shape in the final assembly.

If you write maker identify as IEN - 590

TRUCK . . Hydraulic dump attachment rides forks on company's FF-15 truck

Source: AUTOMATIC TRANSPORTATION CO.
149 W. 87th St., Chicago 20, Ill.

For specified use

Brackets on the two sides of this new hydraulic attachment are designed to slide over the forks of an Automatic Type FF-15 electric truck. Hydraulic cylinders, operating quadrants that mesh with gears on the attachment, connect into the truck's hydraulic pressure lines for load rotation through 190 degrees. The permanently attached truck forks also are hydraulically movable toward or away from each other to take various widths of dump containers. Conversion can be made between fork and dump container operation in about 20 minutes.

If you write maker identify as IEN - 591

A process to bond buna-N or neoprene to aluminum, white metals, nylon has been developed by Minnesota Rubber and Gasket Co., 3630 Wooddale Ave., Dept. IEN, Minneapolis 16, Minn. The company is prepared to supply the bonded parts for specific applications. Nylon bonding is expected to eliminate need for metal inserts in applications employing nylon as a bearing for rubber parts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 592

USERS OF
CLUTCHES
OVER-RUNNING • BACKSTOP • INDEXING

GET THIS FOLDER FOR YOUR FILES!

Explains why FORMSPRAG Clutches give greatest possible torque capacity for size and weight. Shows how the sprags grip at infinite number of positions—no backlash. Also contains basic engineering data.

FORMSPRAG COMPANY
23591 Hoover Road • Van Dyke, Michigan

FULL COMPLEMENT
FORMSPRAG *Clutches*
Distributors in principal cities

If you write maker identify as IEN - 593

PITTSBURGH *air pressure tested* COILS

Pipe Coils — Bends — Boiler Tubes

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

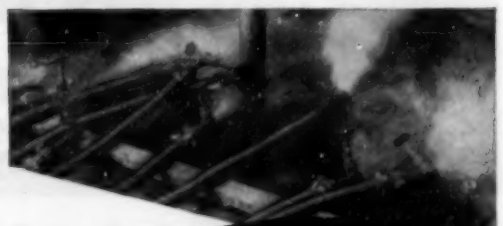
— Send for Coil Data Book, and let us quote —

Welded Headers • Welded Ammonia Receivers • Accumulators

Pittsburgh Pipe Coil & Bending Company
Division of Pittsburgh Standard Conduit Co.
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA

If you write maker identify as IEN - 594

Hose Replacement Reduced... 1/3



with Quaker

IRONSIDES STEAM HOSE

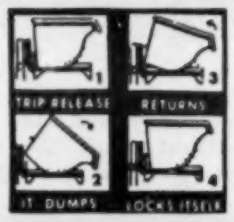
How to lessen hose replacement yet maintain production? That was the cost problem faced by a large chemical company—and solved by Ironsides' ability to give three times the service of other makes. Braided with steel wire and bonded with rubber. Added braid of glass cord for insulation and extra strength. Kink-proof. Easy to handle. At least 4 times stronger than wrapped fabric hose yet costs no more. For economy, use Ironsides—a Quaker exclusive for greater service and safety.

Write for free folder and name of nearest distributor.

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E, Philadelphia 24, Pa. Branches in Principal Cities

If you write maker identify as IEN - 595

SAVE 50% LABOR-TIME with
ROURA Self-Dumping HOPPERS



Only ROURA Has The Exclusive PATENTED Instant Release Handle

Fitting any standard fork or platform lift truck, thousands of ROURA HOPPERS are in constant operation handling wet or dry, hot or cold, bulky materials. Simple to operate—only one man is required for distributing and unloading—quicker and easier.

The ROURA HOPPER dumps, rights and locks itself securely by a simple lift of the patented release handle. Sizes ½ to 2 cu. yds. ROURAS can also be designed for flat trucks and in other sizes to meet specifications—can be equipped with special flanges to permit stacking for storage or future distribution. The ROURA will quickly pay for itself many times over. Write today for detailed brochure.

Use Self-Dumping Containers —they pay for themselves

Imitated by Many—Not Equaled by Any

• SIMPLE
• SAFE
• SPEEDY

ROURA IRON WORKS, Inc.
1409 Woodland Ave. Detroit 11, Mich.

If you write maker identify as IEN - 596

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

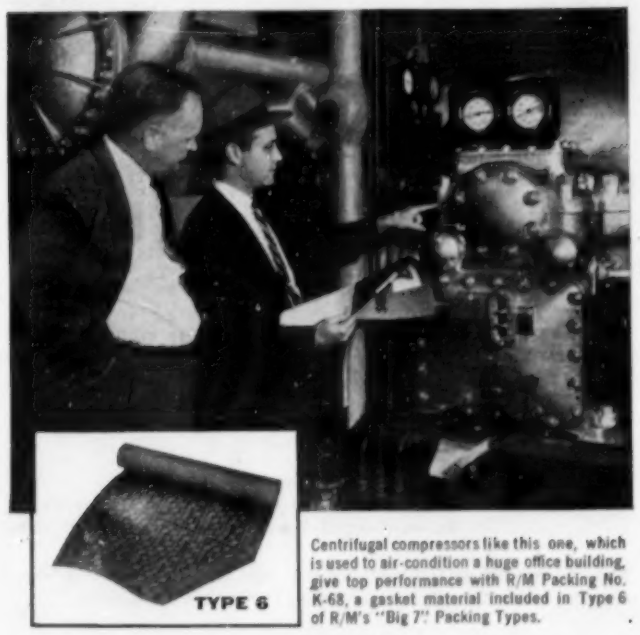
- **HIGH CAPACITY**—Evaporates 3 gallons per hour with ¼ HP motor.
- **AUTOMATICALLY CONTROLLED** at any desired relative humidity.
- **SIMPLE TO INSTALL**—Just uncrate and suspend from ceiling.
- **ELECTRIC MOTORS** for all common current characteristics.
- **WATER SUPPLY** connection for ¼" tube or ⅛" pipe provided.
- **NEEDS NO** pump, duct, compressed air, steam, drain or floor space.
- **EFFICIENT** centrifugal atomization of ordinary city water.
- **TWO MODELS**, ¼ HP for high capacity, ⅛ HP for small rooms.

FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION — Bahnson Company, Engineers and Manufacturers, Winston-Salem, N. C.

If you write maker identify as IEN - 597

R/M's BIG 7 Packing Types meet 95% of all packing needs



Centrifugal compressors like this one, which is used to air-condition a huge office building, give top performance with R/M Packing No. K-68, a gasket material included in Type 6 of R/M's "Big 7" Packing Types.

Let R/M lower your packing inventory

If you are under the impression that you must stock 10, 20, 50 different types of packings, get acquainted with the distributor who sells R/M's "Big 7" Packing Types. R/M's "Big 7" Packing Types have so simplified the whole packing picture that your plant can probably standardize on just three or four. This basic line of just seven field-tested packing types is engineered to give custom-built performance in all but the very rarest packing applications. It can reduce your downtime, cut your maintenance costs, simplify your ordering. Call in your R/M distributor today.

R/M Packings for maintenance purposes are sold only through authorized R/M distributors

R/M BIG 7 PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.; Neenah, Wis.; Crawfordsville, Ind.; Peterborough, Ontario, Canada.

RAYBESTOS-MANHATTAN, INC., Packings • Asbestos Textiles • Industrial Rubber, Engineered Plastic, and Sintered Metal Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Bowling Balls

If you write maker identify as IEN - 599

HEATING . . Electric tape element for wrap around use, length to 120 ft.

Source: COX & COMPANY
16 E. 43rd St., Dept. IEN, New York 17, N. Y.

U/L approved

New **utility types** of the Ribbon Heat tape, previously described IEN-5776-53, are announced by the company. The resistance wire is sealed in plastic tape and one end has flexible leads for connection to a 110 or 220-volt power source. Active length is 20 to 60 ft. for 110 volts, 40 to 120 ft. for 220 volts. A connecting plug can be specified in place of the leads.

The tape applies to prevent freezing or to thaw water lines. It will melt snow when installed under walks and drives. It will keep gutters, drains free from ice. It will protect exposed wet sprinkler lines. Six turns per ft. around a 1-in. water pipe will protect against temperature to minus 150 deg. F.

If you write maker identify as IEN - 600

ADHESIVE . . Water proof liquid to apply Formica, Micarta, Textolite

Source: ADHESIVE PRODUCTS CORP.
1660 Boone Ave., Dept. IEN, New York 60, N. Y.

Adheres cold without pressure

Stix No. 555 is a new liquid adhesive for on-the-job application of laminated plastics such as Formica, Micarta, Textolite on wood, metal, steel, plaster. The adhesive is packaged in pints, quarts, gallons and drums. It has practically unlimited shelf life as it will not thicken or deteriorate during storage prior to use.

If you write maker identify as IEN - 601

DRIVE . . Variable speed control to operate dc. motor from ac. line

Source: CLARK CONTROLLER CO.
1146 E. 152nd St., Dept. IEN, Cleveland 10, Ohio

Bulletin 6520

Vari-Amp 6520 employs a magnetic amplifier control in this new unit to convert ac. power from a 110-volt 60-cycle source to full-wave dc. power to drive a dc. motor. A small rheostat in a control station connecting to the main control housing permits varying the speed in a 10 to 1 range.

The equipment is available with motors ranging from 1/40 to ½ hp. It is supplied with the motor ready to connect to the ac. power source and to the equipment to be driven. Jogging, dynamic braking and reversing action can be specified. No warm up interval is required since there are no electronic tubes in the control.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 602

OWN YOUR OWN HEAT-TREATING PLANT

low in cost
high in productivity
compact in design

here it is in a single unit

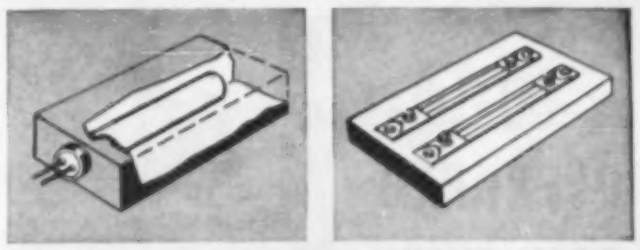
Features include:

1. *Heating Furnace with range of 1000° to 2400° F. automatically controlled (12" wide x 10" high x 18" deep).*
2. *Tempering or Drawing Oven is recirculating type. Work is constantly bathed with evenly distributed high velocity and held to constant temperature by automatic control. Alloy steel lined with perforated shell, has range of 250° to 1100° F. (21" wide x 10" high x 18" deep).*
3. *Furnace and Oven doors equipped with foot treadles.*
4. *Two Quench Tanks for oil and water. By means of double wall construction, oil tank is entirely surrounded by water for cooling oil, thus producing more uniform quenching.*
5. *Automatic electronic type controls.*
6. *Shipped ready to install by simply connecting gas and electric power line.*

A complete line of WALTZ standard or special heat-treating furnaces, using all types of fuels are built to suit your requirements. Write Dept. A for comprehensive illustrated bulletins.

Waltz FURNACE COMPANY
SYMMES STREET • CINCINNATI, OHIO

If you write maker identify as IEN - 603



Heat surfaces conveniently, safely with versatile G-E Calrod* heaters

Wrapped around, cast in, clamped on or spaced away, long-life G-E Calrod heaters give you these surface heating advantages:

Convenience—localize heat right where you want it, on surfaces of all sizes.

Accuracy—thermostatic controls assure exactly the right temperature.

Versatility—sizes, shapes, and ratings are available for almost every need.

For complete information, see your nearby G-E Apparatus Representative or Distributor. And write now for this—

FREE APPLICATION BULLETIN

GEA-5097—"Heating Surfaces with Electric Heaters" Section 720-110, General Electric Company, Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

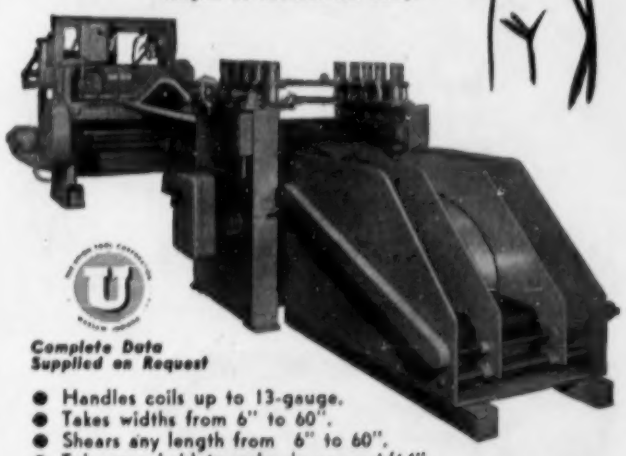
If you write maker identify as IEN - 604

***WITH ONLY ONE OPERATOR THIS* UNION MACHINE**

- DE-COILS
- LEVELS
- SHEARS
- STACKS

CUTS LABOR COSTS **AUTOMATICALLY** CUTS MATERIAL COSTS

Buy in coils and cut sheet lengths as needed. No delay.



Complete Data Supplied on Request

- Handles coils up to 13-gauge.
- Takes widths from 6" to 60".
- Shears any length from 6" to 60".
- Tolerance held to only + or — 1/64".
- Only one adjustment to change lengths.
- Speeds to 150 l.f.p.m. depending on lengths cut.
- Neatly stacks sheared pieces automatically.
- Will handle steel, aluminum, etc.

UNION TOOL CORP.
320 E. MARKET ST., WARSAW, IND., U. S. A.

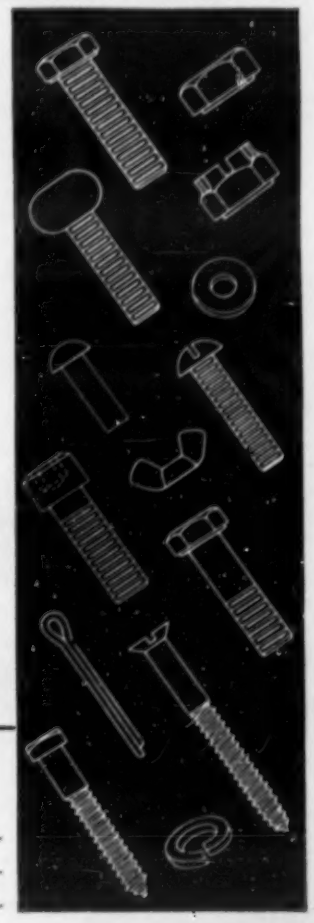
USERS SAY UNION CUTS COSTS, SPEEDS PRODUCTION

If you write maker identify as IEN - 605

HARPER HAS THEM!

Everlasting Fastenings by the Dozen or the Million!

- Specialists in bolts, screws, nuts, rivets, washers and fastening accessories!
- In brass, bronze, copper, aluminum, stainless steels, Monel!
- For all problems involving corrosion, heat, abrasion, stress, appearance!
- America's largest producer of non-corrosive fastenings!
- Larger stocks, greater selection —over 7000 items!
- Deliveries from nearby warehouse and distributor stocks!
- Ask for complete Harper Price List and Stock Book!



HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave.
Morton Grove, Ill.
Rush Harper Price List and Stock Book.

Name.....
Address.....
City.....State.....

If you write maker identify as IEN - 606

OVERHEAD CONVEYING EQUIPMENT

simple, easy installation

Coburn track, brackets and carriers are simple in design . . . present no complicated installation problems. In fact, your own plant personnel can easily handle the job. Inexpensive re-arrangement or extension can also be made at any time because of the section design of Coburn Overhead Monorail.

Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Mass.

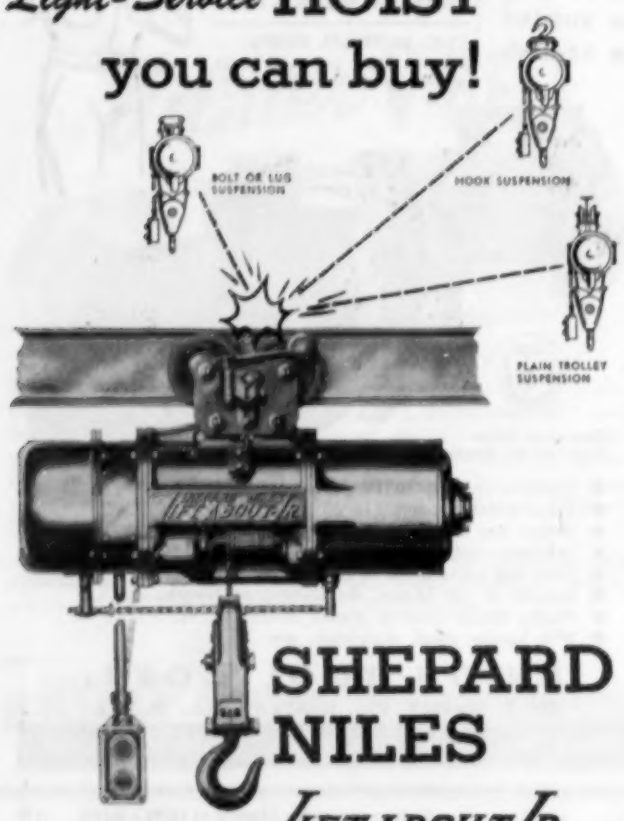
THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION • Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

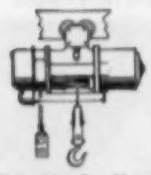
1984

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as IEN - 607

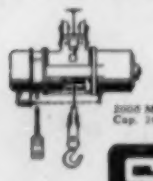
TOUGHEST *Light-Service* HOIST you can buy!





500 T. Parallel or Cross Mounted. Cap. 500 lbs. at 31 F.P.M. (A.C.)

1000 J. Parallel or Cross Mounted. Cap. 1000 lbs. at 20 F.P.M. (A.C.)



2000 M. Parallel or Cross Mounted. Cap. 2000 lbs. at 20 F.P.M. (A.C.)

Hook your load to a Lift About-Jr.—it's the toughest light-service hoist you can buy. This rugged Shepard Niles Hoist is ideal for a hundred-and-one lifting jobs, guarantees you years of dependable service. It offers trouble-free wire rope hoisting, either rope or push-button operation.

Let a Shepard Niles representative tell you about the complete Lift About-Jr. line. He'll help you select the hoist with the right capacity and controls for your job.

SHEPARD NILES
CRANE AND HOIST CORPORATION

MAIL COUPON

SHEPARD NILES Crane and Hoist Corporation
1045 Schuyler Ave., Montour Falls, N.Y.

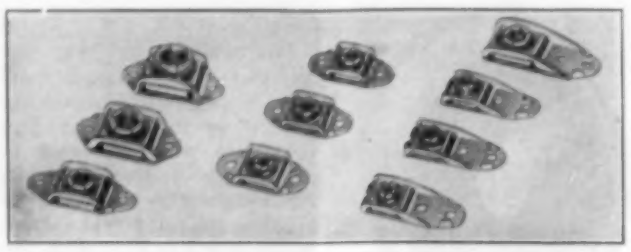
( ) *Please send me new Lift About-Jr. Bulletin.*
( ) *Please have a representative call.*

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 609

FASTENING . . Anchor lock nut in single and double lug construction

Source: NUTT-SHEL COMPANY
811 Airway, Dept. IEN, Glendale 1, Calif.



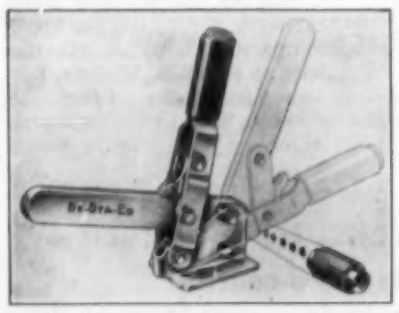
Detail specifications upon request

The lock nut in this new anchor assembly floats in its pressed steel base. The design meets envelope dimensions of proposed Military Standard drawings and conforms to requirements of current specifications AN-N-5 and AN-N-10. The one-lug design is made in four sizes with nuts from 6-32 to ¼-28. The double-lug design is made in these same four sizes and also in $\frac{5}{16}$-24 and ⅜-24 thread sizes. Both designs are suited for temperatures up to 550 deg. F.

If you write maker identify as IEN - 610

CLAMP . . Toggle lever design for use in work holding fixtures

Source: DETROIT STAMPING CO.
342 Midland Ave., Detroit 3, Mich.



Pressure arm clears work

New bushings, serrated design, run full length through the clamp bars where they lock in place in this new De-Sta-Co design of the Series 210, 220, 228 and 240 toggle clamps. The through bushing replaces a hardened pin in bushings the thickness of the bar stock, in the clamp construction previously employed in these series. The design minimizes need for replacement and provides a continuous smooth snap action in heavy production duty. Pressure range in the new design is 500 to 800 pounds. The complete line includes 45 models for pressures to 4,000 pounds.

If you write maker identify as IEN - 611

Machined work can be checked by eye and by touch with the aid of a new corrosion resistant nickel plate measuring about 3 by 7 in. on which 22 typical finishes have been reproduced by electro forming. These finishes range in roughness height from 2 to 500 microinches. The plate, the finishes and its applications to purchasing, engineering, inspection, machining and quality control are described and illustrated in a 4-page bulletin published by the plate manufacturer, Baptist Machine Co., Ludlow St., Dept. IEN, Stamford, Conn. List price of the plate is $15. It is known as the Microfinish Comparator S22.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 612

If you write maker identify as IEN - 613

CARBON BRAZING TIPS
. . . with the famous Stackpole "F" Treatment

STACKPOLE'S recently developed "F" treatment for its Carbon Brazing Tips has resulted in units that operate at temperatures above red heat, require dressing far less often, and increase tip life four to five times that of untreated carbon by minimizing oxidation. Their resistance to cracking or spalling permits more radical temperature changes than is possible with any other material.

SAMPLES...sent for test. State size and shape. Mention company affiliation.

STACKPOLE STACKPOLE CARBON CO. ST. MARYS, PA.

EXPORT: Stackpole Carbon Co., 254 W. 34th St., New York 1, N. Y., U. S. A.

If you write maker identify as IEN - 614

NOW... *Correct Taper*

—FOR MAXIMUM GRIP
—FOR EASY REMOVAL
IN
INTERCHANGEABLE TAPERED BUSHINGS AND SPROCKETS

BOSTON *Gear*

SHOLD-A-GRIP

Correct Taper
—**FOR STRONGER, SLIP-PROOF GRIP**
—**FOR EASY REMOVAL** Provides maximum holding power, even on worn shafts. Permits easy disassembly.

Broader Size Range
FIT SHAFTS ½" to 2½" BY 16THS
Any commonly used sprocket, ½" to 2¼" pitch can be interchanged on an extended range of shaft sizes.

FOR COMPLETE INFORMATION, ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

SEE YOUR **BOSTON** *Gear* DISTRIBUTOR

If you write maker identify as IEN - 615

FAMOUS "CHEM-BOARD"* **CONVOY** TOTE BOXES

*Chemically Hardened Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES
Sold Only by YOUR LOCAL STATIONER
Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

CONVOY, INC.
Canton 6, Ohio
P. O. Station B, Box 216-1

If you write maker identify as **IEN - 616**

SELECT

ROBINSON

TYPE AE EXHAUSTERS

To exactly meet your demands for air handling equipment in . . .

Dust Exhaust Systems
Fume Exhaust Systems
Heat Treating Furnaces
Annealing Ovens, etc.

The AE Exhausters are built in a wide range of sizes and arrangements. They are regularly made from heavy gauge steel plate, welded throughout. They are also built from heat resisting alloys for high temperature applications, or acid resisting alloys for handling corrosive fumes. Ask for Bulletin No. 5100 — It contains capacity and dimension tables.

ROBINSON VENTILATING COMPANY

Manufacturers of Fans and Ventilating Machinery for over fifty years

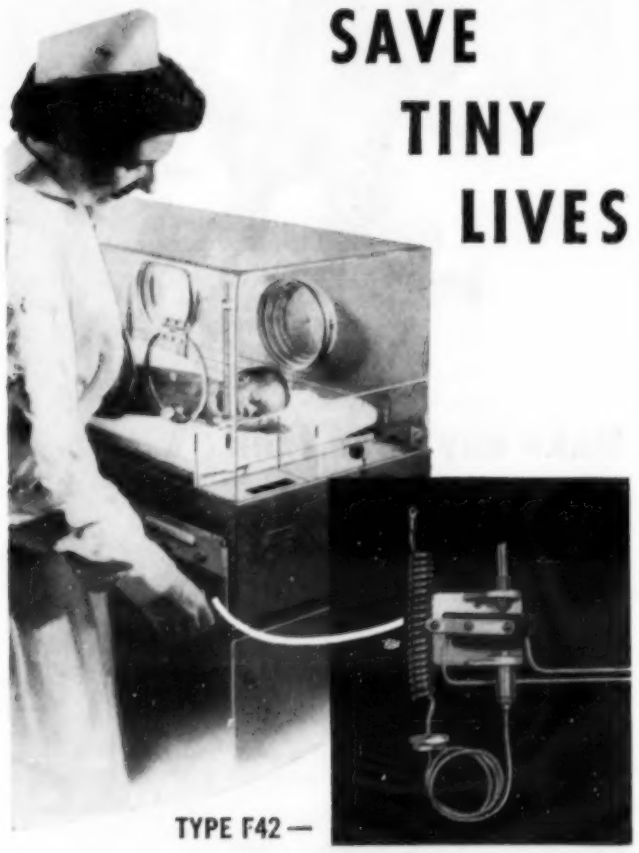
Zelienople, Pennsylvania **(Pittsburgh District)**

If you write maker identify as **IEN - 617**

UE TEMPERATURE CONTROLS

. . . HELP ISOLETTE® INCUBATORS

SAVE TINY LIVES



TYPE F42 —

UE controls are used in many notable applications — but none serves a more vital function than the Type F42 Thermostat now being used in Isolette Infant Incubators.

Isolette incubators feature extremely uniform air conditioning with or without added oxygen. The Type F42 enables these units to maintain pre-set temperature control of ±1°F., within the 75° — 100°F. operating range. It also limits the temperature differential to ±2° — surpassing Children's Bureau specification. The Type F42 achieves this control by switching on or off a 250 watt heating element located in a passage of the air circulation system.

United Electric manufactures a wide line of standard controls. They are being used for controlling aircraft fuel purging systems, paper mill machinery, diesel engines, milk pasteurizers and room air conditioners. And these are but a few of the hundreds of different industrial and domestic applications where UE controls are on the job.

Special controls can either be adapted from standard models, or they can be custom-built by United engineers working in cooperation with your own product development engineers.

For additional information on the Type F42 — or the complete line of United Electric controls and their countless applications — write:

® Registered trademark. Air-Shields, Inc.

Standard and special thermostats and pressure switches

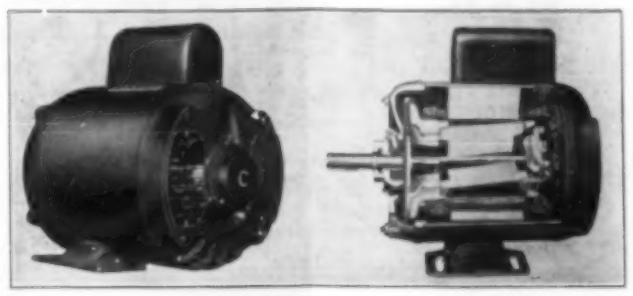
UNITED ELECTRIC CONTROLS CO.

80 School Street, Watertown, Mass.

If you write maker identify as **IEN - 619**

MOTORS . . Induction, 1/6 to 1 hp., in new NEMA frame sizes No. 62 to 68

Source: CENTURY ELECTRIC CO.
1806 Pine St., Dept. IEN, St. Louis 3, Mo.



Details in Bulletin 1-5-P-1

Form F open type drip proof designates new design in the company's line of induction motors with ratings from 1/6 to 1 hp. in which the motor conforms to the new NEMA frame sizes. The motor is available with the rigid base shown in the illustration and also with a cushion type base in which the motor is carried by a base bracket reaching up to the lugs on the end frames.

Type SP is single split phase design for general purpose applications where the load is easy to start and pull up to speed. Type CS is a capacitor start single phase unit for hard-to-start applications such as pumps, compressors, machines that must start when loaded. Type SC is a squirrel cage two or three-phase induction motor for general purpose use. Additional special motors are available to specification.

The rotor is die cast aluminum, squirrel cage design. Its shaft rides in plain wool packed bearings. The stator winding is insulated with laminated rag stock paper and varnished cambric. It employs Formvar plastic insulated wire and is finished in thermal setting baked plastic varnish. The drip proof end brackets are made of cast iron. A new governor mechanism is designed to withstand snap impact.

If you write maker identify as **IEN - 620**

REFRIGERATING . . Chilling equipment extracts heat from metal coolants

Source: WEBBER MFG. CO.
2740 Madison Ave., Dept. 195, Indianapolis 3, Ind.

Help size control

Coolant from a metal working operation such as honing, lapping, grinding, screw machine operations, is passed through a heat exchanger in this new refrigerating equipment for return to the metal working machine. Temperature is regulated by a thermostat that adjusts operation of the refrigerating equipment. A temperature indicator, on the face of the housing, enables the operator to check performances.

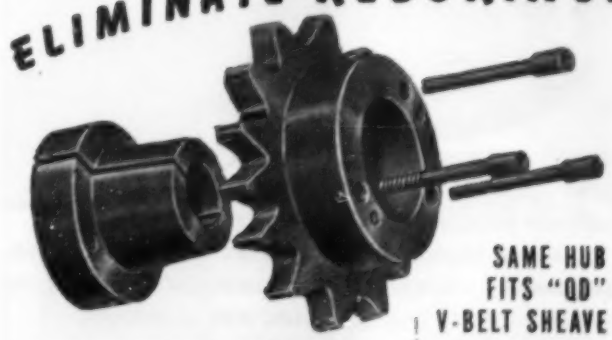
Six units in the present line employ ½ to 3-hp. refrigerant compressors and rate 6,000 to 36,000 btu. per hour based on 90-deg. room temperature. The two smallest units in the line, ½ and ¾ hp., are air cooled and are mounted on casters for portable application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 621**

FORT WORTH QD Roller Chain SPROCKETS WITH TAPERED SPLIT HUB

ELIMINATE REBORING!



SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO.

DEPT. 21, 3600 McCART, FORT WORTH, TEXAS

If you write maker identify as **IEN - 622**

M&M

GIANT KEYSEATERS

M & M Giant Keyseaters, built in a wide range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems today.

MITTS & MERRILL 68

1014 SO. WATER STREET • SAGINAW, MICHIGAN

If you write maker identify as **IEN - 623**

Complete Line of HEAD BLOCKS

WINCHES

COUNTERWEIGHT SYSTEMS

Loads ranging from a few pounds to 40 tons and more must be hoisted and moved quickly and safely on the theatre stage. The complete line of head blocks, hand and motorized winches and counterweight systems — all standard catalog items — which J. R. Clancy, Inc. has supplied for the stage for 76 years is available to meet the many similar requirements of modern industry.

Send for Catalog

Theatrical Equipment Division

J. R. CLANCY INC.
1020 W. BELDEN AVE., SYRACUSE 6, N. Y.

If you write maker identify as **IEN - 624**

THE *Workhorse* OF SMALL GRINDERS

Aro Short Grinder Model 7149, 17,000 R.P.M.

ARO does it *faster . . . at lower cost!*

That's why Rohr Aircraft at San Diego —and hundreds of other progressive plants today — prefer ARO. Complete line grinders for jet engines . . . also heavy duty vertical and horizontal grinders of all types. Write for new catalog 60.

The Aro Equipment Corp., Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO AIR TOOLS

Also . . LUBRICATING EQUIPMENT . . HYDRAULIC EQUIPMENT . . AIRCRAFT PRODUCTS . . GREASE FITTINGS

If you write maker identify as IEN - 623

TODAY'S BEST BUY!

Write for Details or See Your JOHNSON DEALER

MODEL J
10" x 18" Capacity

BONUS CAPACITY AT NO EXTRA COST

CUTS 10" ROUNDS, 18" FLATS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 626

Design your own Precision Gaging Fixtures . . .

. . around this Gage Head Cartridge

Measures by .0001" — .00001"

Compact, shock-proof, and moisture-proof, this inexpensive Brown & Sharpe Gage Head Cartridge No. 953 gives you a simple means for designing high precision into your own gaging fixtures. Plugs into No. 950 Electronic Amplifier which gives readings in .0001" to .00001" . . . only one master required for setting.

Cartridge has frictionless action, adjustable measuring pressure, and is ideal for inspection devices, jigs fixtures, and machines. Write for Bulletin. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

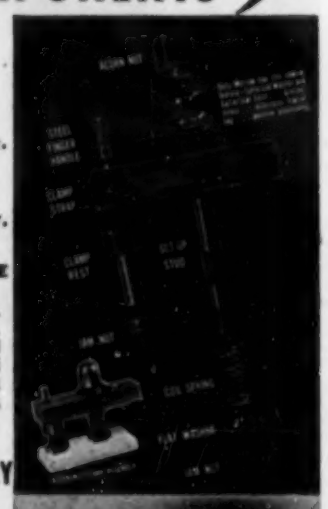
BUY THROUGH YOUR LOCAL DISTRIBUTOR

Brown & Sharpe

If you write maker identify as IEN - 627

Specify **Morton**

FIXTURE CLAMPS and COMPONENTS



- We stand behind every product we manufacture.
- We assure IMMEDIATE delivery.

DEPENDABLE . . . . DURABLE

Largest assortment in the Industry. Economize . . . use them as standards. All precision made of heat treated selected steel, cadmium plated and corrosion resistant mid-nite black finish. Individual parts on assemblies may be purchased separately.

WRITE TODAY

For Catalog of our complete line, includes full size tracing templates of each product. Save tooling and designing costs.

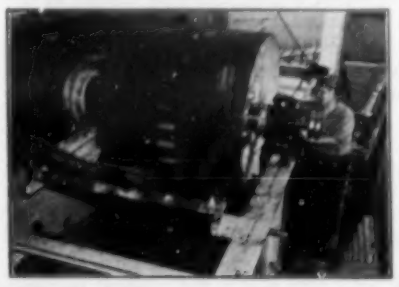
MORTON MACHINE WORKS
2421 Walcott St., Detroit 207, Mich.

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as IEN - 628

Thin coating of abrasive material is adhered to the face of this new "largest" electro-magnet separator pulley to provide belt traction without loss of magnetic strength. The abrasive replaces rubber previously employed to maintain traction. The new unit measures 60 in. in diameter by 48 in. in face width. It is installed in a power house to remove tramp iron from coal. Manufacturer is Stearns Magnetic, Inc., Dept. IEN, Milwaukee 46, Wis.



If you write maker identify as IEN - 629

Dirt and product accumulations are brushed from a conveyor belt when you apply the Fullergript brush made by Fuller Brush Co., 3580 Main St., Dept. IEN, Hartford 2, Conn. The company has prepared a sketch showing how to hitch up a chain drive and mount the brush. A copy will be sent to your request.

If you write maker identify as IEN - 630

Oil Jet trade names a new dead center equipped with a compression lubricant cup to feed a special center grease through a hole reaching back from the center point to the cup. The grease feeds outward through a groove in the hardened center point. The center is made with a 60-deg. point of hardened high speed steel or a wear resistant hard cast alloy. The shank is made of tool steel and can be ground and hardened or left unhardened. Manufacturer is Tool Service, P. O. Box 10265, Dept. IEN, Tampa 9, Fla.

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If you write maker identify as IEN - 631

FLEXIBLE AS STRING . . . GLASS-CLEAR . . . FEATHER-LIGHT . . . FULLY RESISTANT TO ACIDS, ALKALIES, OILS, GREASES, AND WATERS . . . MIRROR-SMOOTH . . . TOUGH AS LEATHER . . . NON-OXIDIZING . . . NON-TOXIC . . . LONG-WEARING . . . FOR THE TRANSMISSION OF LIQUIDS, GASES, AND SEMI-SOLIDS.

TYGON Tubing is available in six standard compounds — continuous lengths — bores up to 2" ID — with or without outer braid reinforcement. Special compounds and sizes made to order.

Write, today, for detailed information and technical Bulletin T-77!

2920

U. S. STONEWARE
AKRON 9, OHIO
PLASTICS AND SYNTHETICS DIVISION

If you write maker identify as IEN - 632

Powerful, easy to use! Cuts loose tough, incrusted grime and picks it up (8 to 20 lbs. per min. average) leaves floor clean, smooth and dry.

TENNANT
INDUSTRIAL FLOOR MACHINE

- Eliminates hand scraping, chemicals, soap, water.
- Cuts cleaning costs; is many times faster than other methods . . . does a better job.
- Ideal for ALL types of grime — tar, grease, metal cuttings, paint, etc.
- Self-propelled; easy one man operation.

RUGGED Tennant Floor Machines for 12" or 16" drum accessories. Motors up to 6 h.p. (gas) or 5 h.p. (elec.) REVO-tool at right has hundreds of alloy steel cutters for heavy duty cleaning.

WRITE TODAY *for illustrated bulletins and FACTS about mechanized floor maintenance.*

G. H. TENNANT CO.
2574 North 2nd Street
Minneapolis 11, Minnesota

The way to finer floors **TENNANT** *Floor Maintenance Systems*

If you write maker identify as IEN - 633

Lightnin® Mixers

Make any open tank a mixing vessel . . .

Mix fluids in a few seconds, anywhere in the plant. Make up chemical solutions . . . mix paint . . . dissolve powders and crystals . . . circulate solvent for cleaning small parts —do hundreds of mixing jobs quickly, thoroughly.

A LIGHTNIN Mixer takes the place of hand stirring, at much lower cost. Just clamp it on any open tank or vessel.

Thousands in use everywhere. Many in service over 20 years. Fully guaranteed.

Thirty models to choose from— ⅛ to 3 HP. Electric and air motor types. *Send today for Catalog B-75.*

FOR PERMANENT MOUNTING . . . Top entering propeller mixers for open tanks, closed pressure vessels. Sizes ¼ to 3 HP. Send for Catalog B-103.

FOR BIG MIXING JOBS . . . Turbine and paddle mixers for open or closed tanks. Sizes 1 to 500 HP. Send for Catalog B-102.

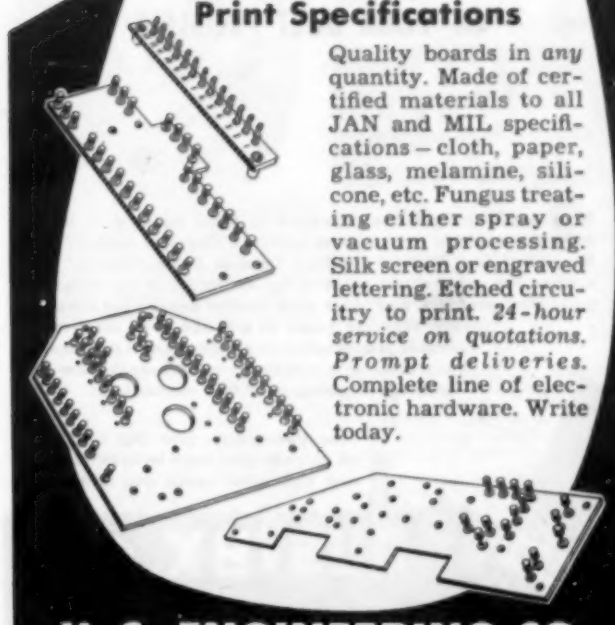
FOR VERY LARGE TANKS . . . Side entering propeller mixers. Sizes 1 to 25 HP. Send for Catalog B-104.

MIXING EQUIPMENT Co., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1, Ont.
MIXCO fluid mixing specialists

If you write maker identify as IEN - 635

Terminal Boards...

Made to Customer Print Specifications



Quality boards in *any* quantity. Made of certified materials to all JAN and MIL specifications – cloth, paper, glass, melamine, silicone, etc. Fungus treating either spray or vacuum processing. Silk screen or engraved lettering. Etched circuitry to print. *24-hour service on quotations. Prompt deliveries.* Complete line of electronic hardware. Write today.

U. S. ENGINEERING CO.

521 COMMERCIAL STREET • GLENDALE 3, CALIFORNIA

If you write maker identify as IEN - 636

Phillips

INDUSTRIAL TRAILERS

✓ FOR HAULING ALL KINDS OF INDUSTRIAL PRODUCTS—MATERIALS

✓ MADE IN SIZES AND CAPACITIES TO MEET YOUR NEED

✓ FEATURE TIMKEN BEARINGS
PNEUMATIC OR SOLID TIRES
ALL STEEL WELDED CONSTRUCTION

MODEL TF-60
6000 lb. Capacity

MODEL TD-1200
120,000 lb. Capacity

Write today for complete data!

Phillips Industrial Trailers simplify hauling of heavy loads in and around industrial plants . . . with substantial savings in time, effort, and money. Ruggedly built to withstand long, hard usage, these trailers are available in capacities from 6,000 to 120,000 pounds. Easily maneuverably — they can be used singly or in tandem, for every industrial hauling requirement.

MANUFACTURERS SINCE 1903 **PHILLIPS** MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

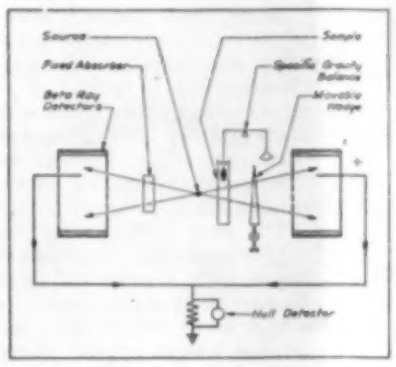
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—*Continued*

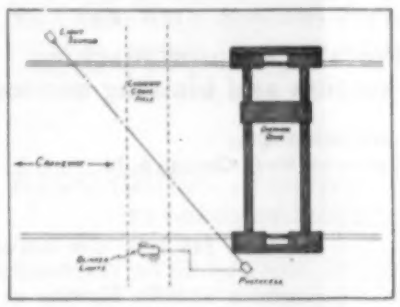
If you write maker identify as IEN - 638

Radio-active strontium 90 is employed in a new instrument to determine the per cent hydrogen in a hydrocarbon. The instrument costs a little under $8,000. It is manufactured by Central Scientific Co., 1700 Irving Park Road, Dept. IEN, Chicago 13, Ill., under exclusive license from Standard Oil Company of Indiana. Time required to make a basic product control test in the petroleum industry is five minutes for the new instrument where previously it required four hours. It is expected that the instrument can be used to advantage at various stages in the production line for gasoline, diesel fuel and other petroleum products.



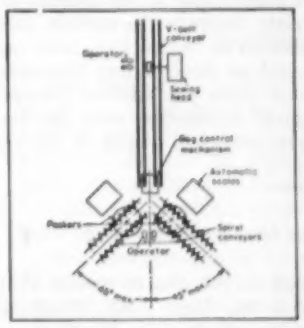
If you write maker identify as IEN - 639

Blinker lights, similar to those employed at railway crossings, flash a warning signal at each of three cross-aisles passing under a 350-ft. crane runway at Standard Pressed Steel Co., Jenkintown, Penna. The overhead crane that serves a steel storage in this area turns the blinkers on and off as it intercepts light beams directed at photocells over each cross-aisle, about as shown in the illustration. The lights are turned on when the crane is about 20 ft. away from a given aisle. Installation cost the company about $250 per aisle for the photocell units, the traffic lights, the necessary controls and wiring.



If you write maker identify as IEN - 640

Y-shaped spiral feed conveyor permits application of two bulk packing machines to fill textile or multi-wall bags in connection with one sewing head. The arrangement permits two men to turn out as many as sixteen 100 lb. bags per minute when an oscillating or bounce packer is employed. They can produce fourteen 100 lb. bags per minute using automatic scales and auger packing. The operator at the packaging machines unloads and loads one while the other is working. Both feed to the single sewing head conveyor through a bag control mechanism. Richardson Scale Co., 668 Van Houten Ave., Dept. IEN, Clifton, N. J., developed the conveyor.



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If you write maker identify as IEN - 641

New **"PULL-GEAR"**
SPEED-REDUCING PULLEY
Increases Drill Press Capacity

NEW MODEL

Provides Correct Speed and Power to Drill up to 1⅜" with ½ H. P. Motor.

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 4 to 3000 RPM. Made in 3 motor shaft sizes: ½"—⅝"—¾". Write for literature.

Some Territories Open to Jobbers

THE PULL-GEAR CO. WRITE FOR LITERATURE

4118 E. 8 Mile Road Detroit 34, Mich.

If you write maker identify as IEN - 642

The Combination for Your Stitching Problems

INLAND *SPEED-FLO* STITCHING WIRE (25 Lb. Coils)

+

INLAND 25 Lb. Controlled Stitching Wire SPOOL

Fits all makes of machines. Every inch of wire is used. The Inland 25 Lb. spool is automatic—all-metal — equal to a lifetime of hard service. SpeedFlo Wire also available in 5, 10 and 50 lb. coils.

is unequalled for *faster*, *better*, and *trouble-free stitching* at *lowest cost!*

Save time, wire and temper! Ask about this combination without obligation

INLAND WIRE PRODUCTS CO.

3963 South Lowe Avenue Chicago 9, Illinois

If you write maker identify as IEN - 643

Call your INDUSTRIAL DISTRIBUTOR for prompt, dependable, quality service to match the quality and dependability of Starrett products.

When it comes to precision measuring tools — the tools that set your company's standard of accuracy — you have complete confidence in Starrett. It is the name you specify, the name you look for before all others on tools you trust. Starrett makes more than 3000 fine tools for every precision measuring need . . . 3000 opportunities to buy with confidence through a convenient and reliable source of supply — your Industrial Distributor.

Starrett
"WORLD'S GREATEST TOOLMAKERS"

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS • DIAL INDICATORS • STEEL TAPES PRECISION GROUND FLAT STOCK • HACKSAWS, BAND SAWS and BAND SAWING

THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

If you write maker identify as IEN - 644

WHEN ARE TWO HEADS BETTER THAN ONE?

FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel...and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

ROEBLING

If you write maker identify as IEN - 645

PICKS UP DIRT, CHIPS, LIQUIDS, CUTTING OILS

• Easily
• Quickly
• Thoroughly

at less cost than ever before. The American Model No. 500-55 picks up 50 to 100% faster due to a new exclusive air handling feature that produces more power than any vacuum of the same motor rating.

Ideal for flood control, boiler cleaning, sump cleaning and powerful enough for any large or difficult industrial, store or building job. By-pass motor unit can be detached for use as a powerful blower or portable vacuum cleaner. Lid fits any 55 gallon tank, permitting shifting from one drum to another in a matter of seconds for easier disposal. Extra large tank and bag keeps machine operating longer between emptyings.

Simple to operate, nothing to get out of order, sturdily built for years of trouble-free service. The model No. 500-55 is only one of a large line of industrial and building vacuum machines, complete with attachments, all suited to a wide variety of uses and applications.

Write for full details today.

AMERICAN CLEANING EQUIPMENT CORP.
2031 South Halsted Street • Chicago 8, Ill.

If you write maker identify as IEN - 646

The "Signature" is the finishing touch on your product!

Ever stop to think that your name plate is really the "signature" on your product? Its appearance should reflect your pride; its durability should match the quality of your product. Let us help you create such a "signature." Our skilled craftsmen, long experience and modern equipment insure finest results. Send a rough sketch or blue print for design suggestion and quotation.

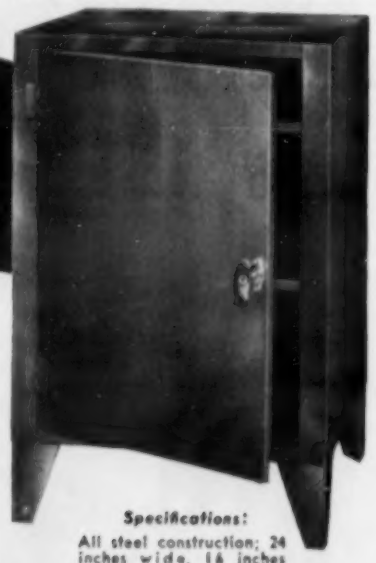
Write now for "Etched or Lithographed Metal Products", with full color examples of name and instruction plates.

CHICAGO THRIFT-ETCHING CORPORATION
1555 N. SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. F
SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

If you write maker identify as IEN - 647

ANGLE STEEL TOOL CABINET

Sturdy-Roomy-Convenient



For use in factories, tool rooms, production departments, factory offices. Essential for on-the-job use, when tools and precision instruments are required.
Steel Top has turned-up edges for keeping tools and instruments from falling off. Single door has cylinder lock mounted in handle.

Specifications:
All steel construction; 24 inches wide, 18 inches deep, 34 inches high. 16 gauge steel top. Two adjustable shelves on 6 inch centers. Olive green finish. Shipped assembled.

Send for FREE Literature.

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

Please send FREE Literature — We're interested in: ...Shop Desks, ...Benches, ...Stools, ...Tool Cabinets, ...Tool Stands.

Company .....

My Name ..... Title .....

Address .....

If you write maker identify as IEN - 648

GAGE . . Monochromatic light to inspect flatness of a work surface

Source: ACME SCIENTIFIC CO.
1448 W. Randolph St., Dept. IEN, Chicago 7, Ill.

For a clear image

Model 700-L has been added to the company's line of monochromatic lights for gaging application. It is available in sizes to cover optical flats with diameters from 10 to 20 inches. Operation is on 110-volt ac. The assembly includes an extension cord and plug.

The new light avoids the necessity of exact alignment of the work and promotes quick inspection. It emits light of a single wave length so interference bands appear sharp and clear visibility on a relatively dull surface or through an appreciable air gap. Each interference band, seen under the light, indicates a vertical height range of 0.0000116 in. to determine surface deviation from flatness.

The bench type cabinet construction permits straight line viewing of fringes with the line of vision perpendicular to the surfaces being inspected. This eliminates common errors resulting from inspection at an angular position.

If you write maker identify as IEN - 649

CLEANING . . Portable vacuum machine for dry suction and blowing service

Source: HILD FLOOR MACHINE CO.
738-42 W. Washington Blvd., Chicago 6, Ill.

Weighs 52 pounds

Model 215 is a new heavy duty machine for dry vacuum cleaning and for blowing action on floors, walls, furniture. It is equipped with a ⅝-hp. universal motor for operation on 110-volt input. As dirt laden air is drawn in, the dirt is directed against the sides of the container to minimize clogging the internal fabric air filter.

Mounting is on two 10-in. wheels equipped with semi-pneumatic tires and on a swivel caster, the latter located directly beneath the suction connection so the suction hose can be employed to pull the unit around as the cleaning proceeds. The 1½ in. hose can be removed from the suction connection and applied at the air exhaust connection near the top for blowing action. Various attachments are available for all cleaning requirements.

If you write maker identify as IEN - 650

Phosphor bronze has been added to the line of metals that American Silver Co., 36-09 Prince St., Dept. IEN, Flushing 54, N. Y., is prepared to supply in rolled strip. Width is to 6 inches. Thickness is from 0.0005 inch. Tolerance is within 0.0001 inch. Quantity is minimum at one pound.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 651

WIRE ROPE SLINGS by WICKWIRE

Wickwire rope slings are offered in both braided and single part construction to meet a wide variety of service requirements.

For additional information write to Wire Rope sales office, Palmer, Mass.

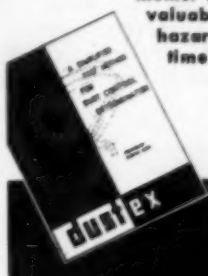
WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2015

If you write maker identify as IEN - 652

THE SHORTEST DISTANCE TO THE SOLUTION OF YOUR DUST PROBLEM

Here is the straight-line approach to facts on how to determine the solution to your dust problem. Our new manual, "A Simplified Test Method for Dust Control Determination" describes the most direct method for determining the scope of your dust problem and your dust control equipment requirements. Whether yours is a problem of recovering valuable process dust or elimination of dust that is hazardous or a nuisance—you'll profit from the time spent going over this manual.



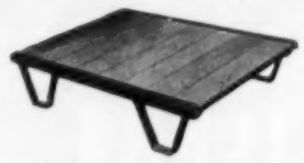
For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

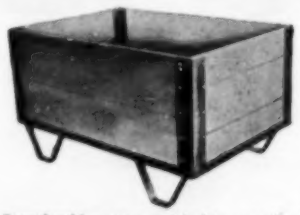
If you write maker identify as IEN - 653

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

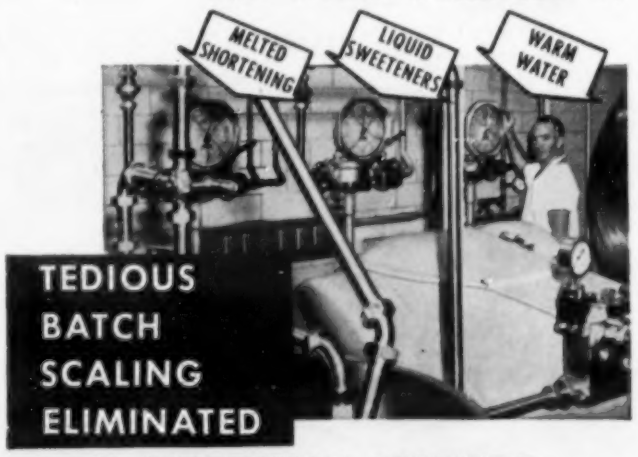
Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 654

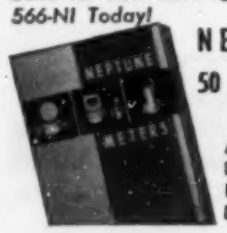


TEDIOUS BATCH SCALING ELIMINATED

with NEPTUNE METERS

These accurate Neptune liquid meters automatically measure ingredients into batches, eliminating tedious scaling, improving uniformity of quality, tightening up on inventories, and saving clean-up time. Neptune can do it for you, too. Ask our field engineers for ideas in handling over 100 industrial liquids—just phone our nearest office.

Send for new Catalog 566-NI Today!

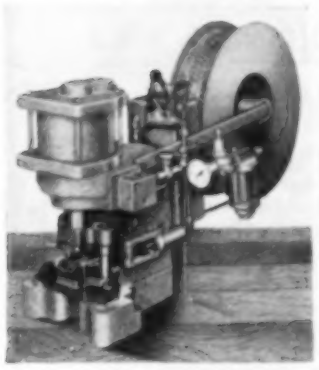


NEPTUNE METER COMPANY
50 West 50th Street • New York 20, N. Y.

Branch Offices
ATLANTA • BOSTON • CHICAGO • DALLAS
DENVER • NO. KANSAS CITY, MO.
LOS ANGELES • LOUISVILLE • PHILADELPHIA
PORTLAND, ORE. • SAN FRANCISCO

If you write maker identify as IEN - 655

FAST, COST-CUTTING TERMINAL ATTACHING on NEW "P-M" *advanced design*



COLD CRIMPING MACHINE

Advanced design of new P-M automatic terminal attaching machine provides many improvements that drastically reduce tool set-up time and production lag. Interchangeable rolling tools are quickly set up in special die-set fully accessible in machine, and removable for faster tool changing on bench. Extra die-sets keep tools set up for quick job change-over.

Using strip terminals in continuous form supplied on nonreturnable reels, the machine automatically crimps and cuts off in one operation to produce fast, efficient, economical terminations. Engineered for rugged, continuous operation. Requires minimum production space. Simple, quiet air pressure operation. Modern color scheme and design innovations promote operator acceptance and minimize operational fatigue.

Low priced for short or long runs, P-M machine is sold outright with set of rolling tools ready for operation. Illustrated catalog of standard strip terminals, with full specifications, available when requested on company letterhead.

PATTON - MacGUYER CO.
18 Virginia Avenue . . . Providence R. I.

If you write maker identify as IEN - 656

Typical, is this model train transformer application of Indicating Action. Real "sell action" here with the two Sterling meters providing informative interest and appealing movement.

How about your product — would an electrical or mechanical indicating device improve its eye appeal and buy appeal? Or perhaps you're dreaming of a new toy, gadget or atomic whatsit that needs an indicating instrument. Let's talk about it—perhaps we can help you, now.

STERLING IDEAS
SEE THEM NOW!

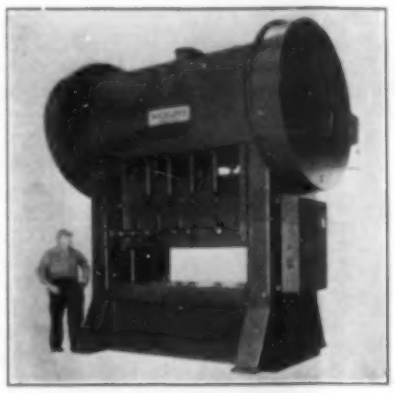
This file folder is chock-full of information on Sterling meter models (A.C. and D.C. Panel, Resistance, Pocket in Ammeters, Voltmeters, etc.) plus examples of specially designed indicating meters for interesting applications. Send for your copy today.

STERLING
MANUFACTURING COMPANY
7201 Wentworth Ave.
CLEVELAND 2, OHIO

If you write maker identify as IEN - 658

PRESS . . Single acting mechanical, 1, 2, 4 crank assemblies, 160 ton up

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio



The clutch runs cool

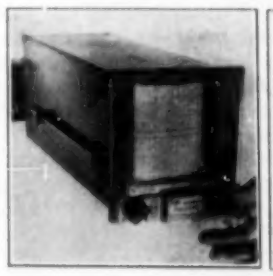
Illustrated is a 245-ton double-crank assembly in the company's new Wickliffe line of straight side single-acting mechanical presses. The line supplements the previously developed Steelweld bending presses and shears. Bed dimensions, on the machine shown, are 48 by 84 inches. Overall dimensions are 103 by 140 by 174 in. above the floor. This machine is typical of equipment the company is prepared to build to order, employing standardized components, for forming, blanking, piercing, trimming, drawing and light embossing.

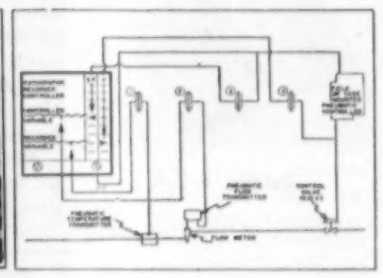
The frame consists of the crown, two straight-side housings and the bed, all box type welded steel construction. Tie rods are shrunk in place. The slide, also made of welded steel, is equipped with a motor operated pushbutton controlled adjustment. The air operated clutch is pushbutton controlled. It can be released and the air operated brake set at any point in the crank rotation. The design features enclosed gearing and accessibility for maintenance.

If you write maker identify as IEN - 659

RECORDING . . Pneumatic instrument records or indicates four variables

Source: FISCHER & PORTER CO.
13 Jacksonville Road, Hatboro, Pa.





For standard or graphic panels

Ratographic is a new miniature instrument occupying 6 by 6 in. of panel space and employing a 4-in. strip chart with electric or pneumatic drive. Two variables can be set up for recording and two for indication on vertical scales at the right-hand side of the recording chart. The recording and indicating actions are controlled by four pneumatic receivers assembled in the housing.

The recorder can be converted into a recording controller by plugging one of the company's standard pneumatic controllers into the back of the recorder chassis. An external automatic-manual transfer knob and a set point knob permit adjustment and smooth transfer from one action to another. The recorder can be pulled forward from a panel mounting without interfering with its functioning.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

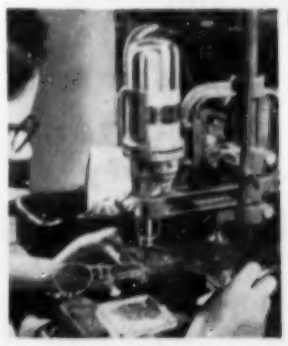
If you write maker identify as IEN - 660

If you write maker identify as IEN - 661

If you write maker identify as IEN - 662

"400% Faster!" "Output Up 110%!" "Costs Cut 64%!"

Three examples of how thousands of companies save time and money with Millers Falls "Adjustomatic"® Clutch Electric Screw Drivers



EYE GLASS FRAMES. Driving tiny optical screws — traditionally an "impossible" job for a power driver. Yet Millers Falls is doing it — and cutting labor costs 64%.

TRAVERSE TRACKS. Drive screws too tight — and tracks crush. Not tight enough — and stops loosen. Millers Falls' record on this job: Rejects — none. Speed — up 400%.

MINIATURE MOTORS. Problem: To drive tiny, self-tapping screws without stripping or splitting a thin plastic housing. **Solution:** Millers Falls No. 52's. **Result:** Production up 110%.

There's a Millers Falls driver that's right for practically every driving problem

Write for full information or let us arrange for a demonstration.

MILLERS FALLS COMPANY
Greenfield, Mass.

MILLERS FALLS TOOLS
SINCE 1868
The Mark of Superiority

If you write maker identify as IEN - 663

With new J-M Chempac®
the asbestos-Teflon packing that withstands virtually all chemicals

This new J-M development combines the sealing action and heat resistant qualities of asbestos with the all-around chemical resistance of Teflon. With Chempac, fewer packing styles are needed for chemical equipment because it seals against many acids, alkalies and solvents at temperatures to 500F. Chempac is recommended for packing pump rods and shafts, valve stems, agitator shafts and many other applications. This Teflon-protected asbestos packing is available from your Johns-Manville Distributor. For complete details, phone him or write Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay Street, Toronto 1, Ontario.

Johns-Manville PACKINGS AND GASKETS

If you write maker identify as **IEN - 664**

new Variac®

Continuously-Adjustable Autotransformers with Exclusive Duratrak Construction

The new DURATRAK brush-track coating on Variacs has improved their performance greatly. New Variacs now have greatly extended life, can withstand initial surge currents 10 times rated value, and require the minimum of simple maintenance.

The new Type V-2, rated at 0.345 kva supplies output voltages continuously adjustable from 0 to either 115 or 135-volts from a 115-volt a-c line. It takes up only 3½ x 3¾ inches of panel space, and is priced at $12.50.

For complete data on all Variac units and combinations with power ratings from 0.345 kva to 25 kva, write for the NEW Variac Bulletin.

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts

90 West St. NEW YORK 6 — 920 S. Michigan Ave. CHICAGO 5 — 1000 N. Seward St. LOS ANGELES 38

If you write maker identify as **IEN - 665**

UNIVERSAL

EXPANDED METAL FLOOR TRUCKS

- **Greater Economy**
- **Greater Utility**

MODEL 4-A
Length 40", width 30", height 30".

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers in sizes and quantites to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

If you write maker identify as **IEN - 666**

NEW SBS WATERLESS WASHSTATION*

"brings the washroom to the worker"*
for only $52.50 per unit
(F.O.B. Saginaw, Mich.
Towel Dispensers not included)

SBS Waterless Washstations are complete units for hand washing on the job. Because they dispense SBS-30 Waterless Skin Cleanser, these Washstations require no plumbing . . . SBS-30 is simply rubbed on the hands and wiped off along with all the soil.

SBS Waterless Washstations —

- **In Trouble Spots** — Avoids workers use of irritating, harmful solvents. Quickly and safely removes tars, greases, paints, varnishes and other hard-to-remove soils.
- **On the Production Line** — Cuts to a minimum costly interruptions for hand washing.
- **Actually Earn You Money** — By eliminating one unnecessary trip per day for hand washing by only 10 men, you can save up to $720 annually.

Fill out and mail the coupon below for complete information about SBS Waterless Washstations and our 30-day no-risk money back trial offer.

*Trademark

SS-A

SUGAR BEET PRODUCTS CO., Dept. 7E, SAGINAW, MICHIGAN
Sirs: Please send me full information about the new SBS Waterless Washstation and your 30 day no-risk money back trial offer.

NAME _____
TITLE _____
COMPANY _____
CITY _____ ZONE _____ STATE _____

SUGAR BEET PRODUCTS CO. • Saginaw, Mich.
Chemical By-Products Division

If you write maker identify as **IEN - 667**

CLEANING . . Rotary brush machine to scrub, sand, wax and polish a floor

Source: HILD FLOOR MACHINE CO.
738-42 W. Washington Blvd., Chicago 6, Ill.

Switch protected

New switch mounted in the handle of the Model-K floor machine, previously described IEN-7899-53, closes the operating circuit when its lever is pressed against the handle grip. It opens this circuit when the lever is released so the machine cannot be accidentally plugged into a power source with the circuit closed. If the operator lets go of the handle for any reason, while he is working with the machine, the circuit is opened and the motor will stop.

The machine mounts a ⅓-hp. vertical motor that requires no lubrication. It drives a 12½-in. brush at 210 rpm. and weighs 38 lb. with the brush attached. Power is transmitted from the motor to the brush through a cog tooth belt made of rubber and nylon, reinforced with multiple strands of steel cable embedded in the rubber.

If you write maker identify as **IEN - 668**

SWITCH . . Foot operated, double circuit interlocked assembly

Source: LINEMASTER SWITCH CORP.
426 Woodstock Terrace, Dept. IEN, Woodstock, Conn.

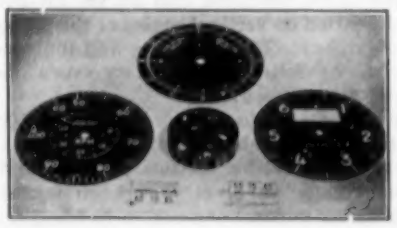
Catalog B-2-S

Executive designates a new assembly of two interlocked single-pole double-throw switches. Either switch, or both, can be wired as normally open or normally closed. Operation is by depressing one side or the other of the flexible cover housing. The interlock prevents depressing both at the same time. Finish is baked hammertone gray.

Rating is 20 amp. on 110-volt ac. on each circuit. Dimensions are 4 by 4⅝ by 1¼ inches. List price of the new switch price is $6.50

If you write maker identify as **IEN - 669**

Luminous compounds, radioactive, phosphorescent, fluorescent, and their application on dials, pointers, knobs, name plates, is the specialty of Sampson Chemical & Pigment Corp., 2836 W. Lake St., Dept. IEN, Chicago 12, Ill. The company can start with your blueprints, to make the parts also, if you want the whole job done on contract.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 670**

Waldes Truarc Internal Grooving Tool for precision cutting of internal grooves in bores and housings

FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!

Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate...readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine...assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling...resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes...extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

If you write maker identify as **IEN - 671**

WHEN HOLDING POWER REALLY COUNTS!

As one of the leading producers of industrial fasteners, Eagle makes certain that its wood, machine and sheet metal (self tapping) screws have highest holding power.

High quality, certified materials, closely controlled manufacturing operations and strict inspection assures overall precision.

Eagle is highly qualified to produce "special" cold forged products—and offers engineering assistance in the development of these products.

the EAGLE LOCK COMPANY
Subsidiary of Bowser, Inc.
TERRYVILLE, CONNECTICUT

If you write maker identify as **IEN - 672**

tools that Streamline electrical maintenance

FOR ELECTRONIC TROUBLE SHOOTING

WESTON Model 785
Industrial Circuit Tester

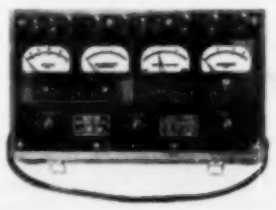
A multi-range, multi-purpose, ultra-sensitive analyzer, for laboratory and industrial checking of electrical and electronic circuits. Has 28 practical scale ranges; measures d-c and a-c voltage, d-c and a-c current, and resistance. Accessories available to extend ranges. Compact and portable; oak or steel case.

FOR MOTORIZED EQUIPMENT

WESTON Model 633
Clamp Volt-Ammeter

For convenient and rapid measurement of a-c voltage and current without breaking the circuit. Jaws take insulated or non-insulated conductors up to 2" diameter. Has 6 position thumb switch for range selection, and adjustable pointer stop for measuring motor starting current. Also available as a-c clamp ammeter, without voltage ranges.

FOR POWER PROBLEMS



WESTON MODEL 639
A-C Industrial Analyzer

A combination Voltmeter, Wattmeter, Power Factor Meter, Ammeter with all interconnections made. Only one hook-up required to measure a-c current, voltage and power in 3 phase, 3 wire balanced circuits. Adequately insulated binding posts, high overload capacity.

AVAILABLE THROUGH LEADING DISTRIBUTORS

WESTON Instruments

WESTON Electrical Instrument Corporation
614 Frelinghuysen Avenue, Newark 5, New Jersey

If you write maker identify as IEN - 674

VARGLAS permafil SLEEVING

Shortly after our first announcement of Varglas Permafil Tubing, engineers began praising its many features — especially its extra flexibility and toughness.

Now, for the first time, Varglas Permafil Sleeving is available in N.E.M.A. grades C-2 and C-1. This new sleeving is lighter coated than the Permafil Tubing but it frequently does the insulating job where tubing was formerly used — and, of course, the cost is much less. Available in coils. Write for free test samples and prices.

VARFLEX CORPORATION
306 Jay St. Rome, N.Y.

If you write maker identify as IEN - 675

New! VARY-TALLY

Multiple-Unit Reset Counter

DESIGNED TO COUNT ANYTHING COUNTABLE

this new Vary-Tally can be supplied in any combination up to 6 banks high, 12 units wide, with the counting units arranged compactly on stands in tiers. Now check these special features of Veeder-Root design and construction:

- Easily Readable from any Angle . . . Bold Figures Always Centered in Window . . . No Glare . . . Figures not Covered by Fingers in Operation
- Easily Portable, yet Ruggedly Built for Long Wear
- Separate Counting Units Can be Rotated like Tires on a Car, to Distribute Wear Evenly
- All Parts Corrosion-Resistant
- Working Parts of Hardened Steel
- Operation Not Affected by Extreme Heat or Cold
- Individual Tag Above Each Counter-Window — Not Strip Tabs
- Veeder-Root Quality in Every Part

Now what's on *your* mind, that Vary-Tally can help you count? Write for news sheet and prices.

VEEDER-ROOT INC.

HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as IEN - 677

DUST COLLECTING . . Electrostatic unit with automatic washer and conditioner

Source: WESTINGHOUSE ELECTRIC CORP.
202 Readville St., Boston 36, Mass.

Keeps itself clean

New design in the company's PX Precipitron electrostatic dust collecting equipment includes a motor driven mechanism mounting needle spray nozzles. It moves slowly across the face of the unit to remove accumulated dirt from the electronic collector plate surfaces.

The mechanism reverses upon reaching the limit of its travel and returns to its starting position where it comes to rest while air is directed over the plates to dry them. Then it resumes operation to apply an adhesive oil to the plate surfaces that assists in collecting future dirt in the air stream and acts as a solvent for the next washing cycle.

Cleaning starts when the operator presses a button to initiate action that starts by removal of high voltage from the section being cleaned and restores this voltage when the cleaning cycle is completed. The equipment employs separate power packs and controls. It is available to meet specified air cleaning requirements.

If you write maker identify as IEN - 678

TESTING . . Gas analysis apparatus injects absorbents in repeat cycles

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Action is thorough

Fisher-Reeder trade names a new patented pipette and motor driven cycling control. It is a standardized unit for gas analysis to free the laboratory worker from routine manual operations. The pipette is employed in groups of three connecting into a control box in which a motor driven cam opens and closes a solenoid circuit 24 times a minute.

Each pulse through the solenoid forces an iron cored glass plunger upward to push absorbent into the pyrex glass chamber of the pipette. The absorbent emerges through four jets to wet the chamber-walls, pick up its particular component and then fall to the bottom of the pipette.

At this point the solenoid releases the plunger to drop to the bottom so more absorbent can flow through a side port for the next cycle. A neoprene bumper, at the bottom, protects the glass parts. Individual pipettes list at $60. The control assembly to serve three pipettes adds $45.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 679

ELECTRODES, HOLDERS, FORGINGS, CASTINGS, ALLOY ROD and BAR STOCK . . . . For Better Resistance Welding.

means . . .

WEIGER-WEED SHIPS THE SAME DAY!

Service is what you can count on from Weiger-Weed. Many of the electrodes and holders listed in WW Catalog 14.650-4 are carried in stock. And, by means of a streamlined order-handling system, shipment is made from this stock on the same day the order is received. If there is not sufficient quantity on hand, part of your order is shipped immediately, the remainder later.

Along with this new, fast SSD service, you can continue to count on WW top quality in resistance welding materials.

WRITE, WIRE OR PHONE YOUR ORDER TODAY

WW

Teletypewriter DE-1179
Telephone TEnex 4-5400

WEIGER-WEED

Weiger-Weed & Company, Division of Federal Metallurgical Corporation, 11644 Clouverdale Avenue, Detroit 4, Michigan

If you write maker identify as IEN - 680

How much Vacuum do you need?

It is wise to get a vacuum machine large enough the first time, because you will find so many new uses for vacuum in your plant. Spencer Industrial units start at 1½ HP—run up to 100 HP. For the factory offices, Spencer offers sturdy machines as small as ½ HP. Special vacuum tools for any purpose.

The Spencer representative has application data on more than 130 unusual uses — bulletin on request.

PERMANENT INSTALLATION

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

466-O

If you write maker identify as IEN - 681

SUB-MINIATURE PILOT LIGHTS *Approved* for AIRCRAFT

AND IMPROVED IN IMPORTANT DETAILS

DIALCO

A great aid to your miniaturization program

SUB-MINIATURE INDICATOR ASSEMBLIES

ACTUAL SIZE

NON-DIMMING
No. 8-1930-621

MOUNT IN 15/32" HOLE
ALL LENS COLORS

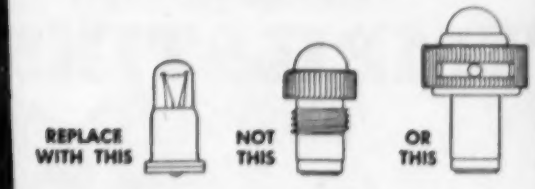
Easy lamp replacement with any midget flanged base lamp types

Complete blackout or semi-blackout dimmer types

ACTUAL SIZE

MECHANICAL DIMMER
No. 11-1930-621

THESE ASSEMBLIES LOGICALLY REPLACE LAMPS NO. 319, 320, and 321



PLASTIC PLATE (EDGE) LIGHT ASSEMBLIES

AIR FORCE and BUREAU of AERONAUTICS
MIL-L-7806 DRAWING MS-25010

ACTUAL SIZE

DIALCO *No. TT-51* (Red filter-black top) or, *No. TT-51A*, complete with No. 327 Lamp

ALSO MADE
with other filter colors and with *light-emitting top* (for indication)

ALL OF THE ASSEMBLIES ILLUSTRATED ACCOMMODATE LAMPS NOS. 327, 328, 330, and 331.

ANY ASSEMBLY AVAILABLE COMPLETE WITH LAMP

SAMPLES ON REQUEST — NO CHARGE

Foremost Manufacturer of Pilot Lights

DIALIGHT CORPORATION

60 STEWART AVENUE, BROOKLYN 37, N. Y. HYACINTH 7-7600

If you write maker identify as **IEN - 683**

POWER IN MARKING TO LIFT A HOUSE

The Screw Pressure Principle of the ACROMARKER NAME PLATE AND PARTS STAMPING MACHINE makes it adaptable to stamping steel and all other metals and materials.

ASK FOR PRICES AND LITERATURE

The ACROMARK Company

7 MORRELL ST., ELIZABETH 4, N. J.

"THE ORIGINAL MARKING SPECIALISTS"

If you write maker identify as **IEN - 684**

Noise Reduced 50%*

inside a BURGESS-MANNING Acousti-Booth

- Hushed interior . . . a quiet restful place to hear well.
- Light, sturdy construction for ease of moving.
- Doorless construction...light, airy, well ventilated...easy to keep clean.
- Simple construction . . . no moving parts—therefore, easy to maintain.
- Modern in appearance. Suited to any location.

Model 211 Floor Booth

Model 602 Wall Booth

** Based on studies by a prominent research organization.*

Write for Bulletin A-124

BURGESS-MANNING COMPANY

Architectural Products Division

5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as **IEN - 685**

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in WELDING, FLAME-CUTTING, TEMPERING, FORGING, CASTING, MOLDING, DRAWING, STRAIGHTENING, HEAT-TREATING IN GENERAL

$2 each — gives up to 2000 readings

it's this simple:

- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16¼" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____

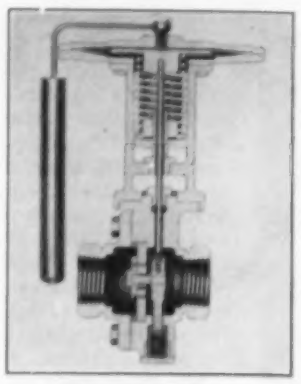
COMPANY _____

ADDRESS _____

If you write maker identify as **IEN - 686**

VALVE . . Temperature regulator for use in steam and water lines

Source: JORDAN REGULATOR CORP.
1609 Carew Tower, Dept. IEN, Cincinnati 2, Ohio



Gate wipes the plate

Figure 80 is new design of the company's sliding gate valve, previously described IEN-12494-52, for use as a pressure regulator. A temperature sensitive bulb and capillary tube are employed above the diaphragm in the place of the pressure regulating screw in the previous model. Increasing pressure above the diaphragm, due to rising temperature surrounding the bulb, causes the valve stem to move downward carrying the gate with it to close the flow ports. Sizes range from ¼ to 2 inches. Face-to-face dimension is about 3½ to 4½ inches.

The valve is available with a body made of cast iron, bronze, steel and any of the castable stainless steel alloys. The orifice plate and sliding gate are made of hardened stainless steel. The diaphragm is bronze.

If you write maker identify as **IEN - 687**

PRINTING . . Photocopy machine to reproduce book pages or flat sheets

Source: PEERLESS PHOTO PRODUCTS INC.
652 Tesla Road, Shoreham, N. Y.

Ask for Dri-Stat Folder

Illustrated is a new Flat-Bed printer in the company's line of Dri-Stat photocopy equipment. This new machine measures 15 by 9 by 5¼ inches. A book can be opened to a desired page, turned face down, and secured by the lever operated plate clamp, for photo-copy reproduction. Lighting equipment, in the printer housing, provides uniform illumination over the surface. Exposure is controlled by an electric timer.

The book page or a flat sheet is placed with a sheet of negative sensitized paper in the printer. The exposed negative and a sheet of positive sensitized paper are then inserted in a separate processor. Motor driven rollers guide the sheets through the processing solution. About 20 sec. after passing through the processor, the positive is separated from the negative. Then it air dries quickly. The negative can be filed for record purposes. Cost of a photocopy is about 10 cents.

If you write maker identify as **IEN - 688**

Brazing rings are now available on cardboard tubes from which they can be taken quickly, one or several at a time, to feed into a production operation. The tubes keep the rings in correct shape and protect them until they are placed on an assembly job. The packaged rings are available from Alloy Ring Service, 1095 E. 52nd St., Dept. IEN, Indianapolis 5, Ind.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 689**

Protect

Expensive GAGES

Sprague Shut Off Valves automatically cut out gages and other pressure-sensitive instruments when fluid pressures go beyond their operating limits. Automatically open when pressure is again within approx. 80% of set cut-out points. Available for any pressure setting between 10 PSI and 5000 PSI.

Save valuable man hours. Eliminate opening and closing manually operated shut off valves. Supplied with standard pipe thread connections, also available with AN tube fittings. Body is 1½" aluminum hexagon stock. Length 5½". Bronze or stainless steel bodies also available. Easy to install. Thousands in use. Write for bulletin.

SPRAGUE

Engineering and Sales Corp.

1144 WEST 135TH ST., GARDENA, CALIF

If you write maker identify as **IEN - 690**

FAST... EFFICIENT materials-handling with COLSON casters

There's a COLSON Caster designed to meet every industrial materials-handling requirement—*exactly*. Old, bumpy hard-to-handle equipment can be restored to its original efficiency quickly and economically with COLSON Casters. Other COLSON materials-handling equipment includes hand trucks, barrel and drum trucks, platform trucks and lift-jack systems. Write us or consult the yellow pages (under "Casters" or "Trucks, industrial") for the COLSON office near you.

Model 3-427-45 for medium weight industrial equipment.

Model 5-807-15 for heavy duty industrial work, capacity 800 lbs. per caster.

Model 6-807-65 made of heavy duty steel for extra heavy service, practically indestructible.

Write for new catalog "COLSON Trucks and Casters"

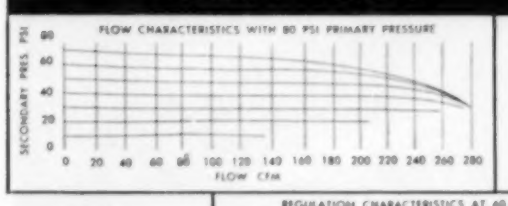
THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS · LIFT-JACK SYSTEMS · INDUSTRIAL TRUCKS

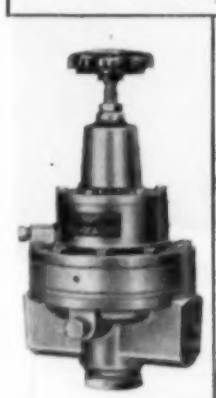
If you write maker identify as **IEN - 691**

performance data prove *NEW*

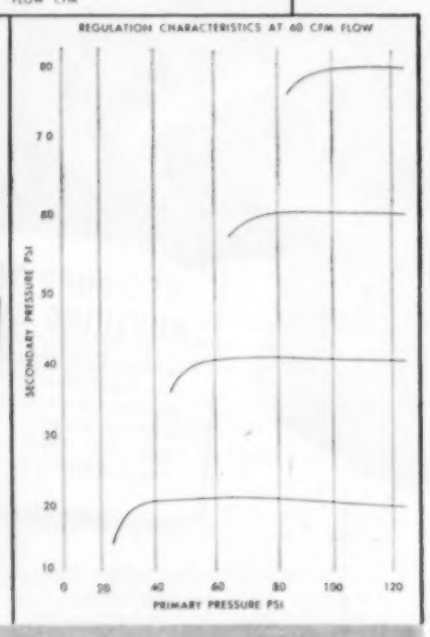
Norgren Pilot-Controlled Regulators

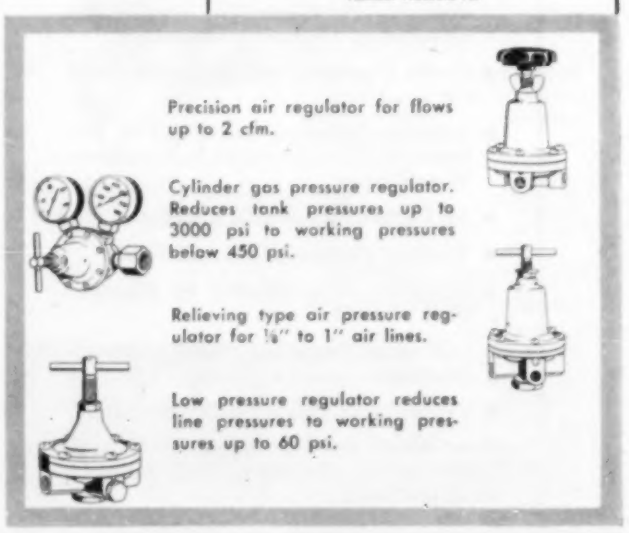
- have greater capacity
- are more accurate





Norgren Pilot-Controlled Regulator, Integral Type; also available with remote control.





Precision air regulator for flows up to 2 cfm.

Cylinder gas pressure regulator. Reduces tank pressures up to 3000 psi to working pressures below 450 psi.

Relieving type air pressure regulator for ⅛" to 1" air lines.

Low pressure regulator reduces line pressures to working pressures up to 60 psi.

PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

Valves • Filters • Regulators • Lubricators • Hose Assemblies

WRITE FOR NEW CATALOG No. 600

C. A. Norgren CO.
3432 So. Elati, Englewood, Colo.

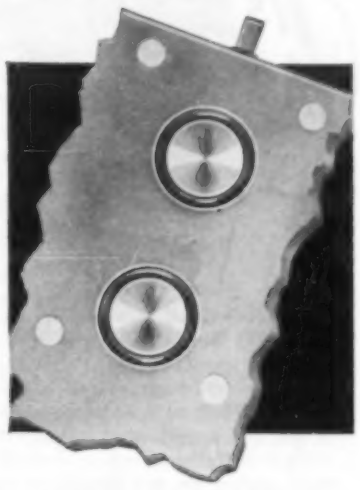
If you write maker identify as IEN - 693

New HARTWELL

Push Button

Trigger Action

FLUSH LATCH



MODEL H-2

• A new latch development for modern equipment. Combines the desirable features of push button operation with the positive simplicity of trigger action in a small, rugged, lightweight yet inexpensive flush latch.

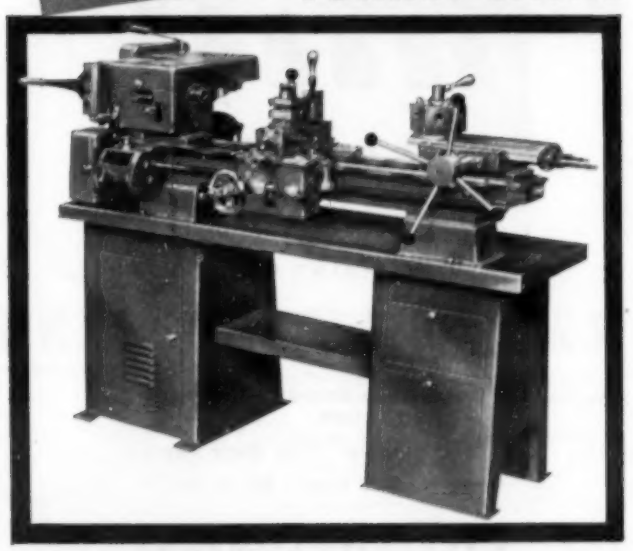
Available in many offset combinations for various door and frame thickness arrangements. Standard with or without gaskets in stainless steel or cadmium plated cold rolled steel.

Write for new 1954 Flush Latch Catalog

HARTWELL COMPANY | *Manufacturer of Flush Latches and Hinges, Fittings and Cable Terminals*
9035 Venice Blvd., Los Angeles 34, Calif.

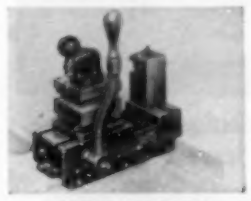
If you write maker identify as IEN - 694

NEW CLAUSING 5300 TURRET LATHE



biggest PLUS in lathe history!

HEAVY DUTY BED TURRET
Massive grey-iron bed and ram castings . . . ⅜" x ⅝" precision ground ways . . . key parts hardened steel precision ground . . . turret head, 5⅝" hex, 6 stations, 1" tool hole . . . ram, 16¾" long . . . weight 130 lb.



CARRIAGE TURRET
This assembly replaces the standard carriage . . . four way tool post turret is released by convenient lock handle and rotated to any one of four operating positions, automatically indexed. Operates either by lever or cross feed screw.

The massive new 12" Clausing "5300" series precision lathe equipped with lever type collet chuck, lever type carriage turret and bed turret is the biggest PLUS in the 1" collet capacity hand turret lathe field. For the rapid machining of duplicate parts, on short run jobs and hand screw machine work, it is unexcelled. Ideal for second operations . . . perfect for experimental and research development work.

Bed turret has 6 stations for 1" tool shanks. Carriage turret provides for five more operations. Precision ground, forged steel headstock spindle turns on widely spaced Timken "Zero-Precision" tapered roller bearings and has 1" collet capacity and 1⅜" hole.

Other *Accuracy Plus* and *Capacity Plus* features include new heavy-duty headstock, massive bed and precision ground Vee and flat ways, built-in countershaft with friction clutch and brake for instant starts and stops of spindle without stopping motor, automatic double-walled apron with splash lubrication, 12 spindle speeds, 29 to 1300 RPM, quick change mechanism, 48 power feeds.

The Clausing "5300" turret lathe equips you for test runs or round the clock production at lowest cost. See it at your nearest Clausing dealer's!

WRITE FOR ILLUSTRATED LITERATURE TODAY!

Atlas CLAUSING

CLAUSING DIVISION
Atlas Press Company
1-105 N. PITCHER ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 696

LUBRICATING . . Hand pump oiler delivers through flexible steel spout

Source: EAGLE MFG. CO.
25th & Charles St., Wellsburg, W. Va.

Holds 6 ounces

The body in this new pump type oiler is made of seamless steel and is fitted with a seamed bottom. Finish is in copper. The body is fitted with a flexible steel spout that will not leak oil and can be entered into confined locations. The pump mechanism operates without need for packing. Pump parts are replaceable. The oiler will deliver a stream or a single drop, depending on operation of the pump lever.

If you write maker identify as IEN - 697

MUFFLER . . Absorption design for pneumatic intakes and exhausts

Source: BURGESS-MANNING CO.
749 Park Ave., Dept. IEN, Libertyville, Ill.

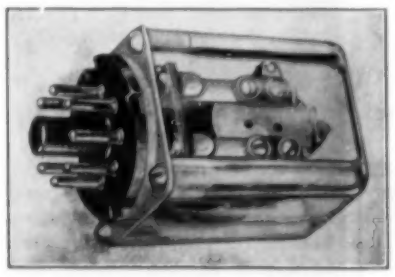
Technical data upon request

Cylindrical steel housing encloses an assembly of perforated tubes surrounded by a layer of sound absorbing material for operating temperatures of 200 deg. F. or more in this new intake and exhaust silencer. Two series are designed for operation under moisture free air conditions. Each minimizes restriction to air flow. Connections are made at the ends of the cylindrical housing. Series CA is available in pipe sizes to 6 inches. Series LCA in sizes larger than 6 inches.

If you write maker identify as IEN - 698

RELAY . . Enclosed plug-in design can be actuated by photoelectric cell

Source: POTTER & BRUMFIELD
221 N. Main St., Princeton, Ind.



Bulletin 100

Type KCP designates a new plate circuit current actuated relay enclosed in a clear polystyrene dust cover. Contact rating is 2 amp. on 110-volt ac. Operating coil power is 125 milliwatts per movable pole with a contact pressure of about 10 grams.

Various contact arrangements include single and double pole, single and double throw, normally open or normally closed. The operating coil is available with rating of 2,500 to 10,000 ohms. Pull in ranges from a little over 3 ma. to about 7 ma. in nominal value.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Too many files go to an early grave because of incorrect use and lack of care. Nicholson goes to great lengths to put extra quality and life into Nicholson and Black Diamond files in order to give industrial concerns an extra measure of filing production. Getting it is well worth keeping workers reminded of these simple rules:

DON'T put too much pressure on forward file stroke.

DON'T drag file back under needless pressure.

DON'T let files become clogged with dirt or filings.

DO "tap" file frequently (on wood) to loosen chips; also clean with file brush or "card."

DON'T throw files on top of one another.

DO keep files separated (in racks).

DON'T let files rust. (Corrodes and dulls teeth.)

DO use The right file for the job.*

***Consult Your Industrial Distributor**

"FILE FILOSOPHY," Nicholson's famous book on kinds, use and care of files, is FREE for use in "school shops," tool rooms, etc. How many copies can you use?

NICHOLSON FILE CO. • 33 Acorn St., Providence 1, R. I.
(In Canada: Nicholson File Company of Canada Ltd., Port Hope, Ontario)

NICHOLSON U.S.A. **NICHOLSON** *A FILE FOR EVERY PURPOSE*

If you write maker identify as IEN - 700

Fast DIRECT-CAST Investments...with new Detroit Furnace

Type IC Furnace with mold attached.

This new direct-casting Detroit Electric Furnace produces better precision castings in less time. Fast, indirect arc melting plus direct furnace-to-mold casting cuts production cycle to as little as 7 minutes.

Uniform melts bring lowest reject rate, increases over-all efficiency. Low power consumption, high utilization of heat for operating economy. Get full information on Type IC Detroit Electric Furnace for higher precision casting production. Write today!

FEMA

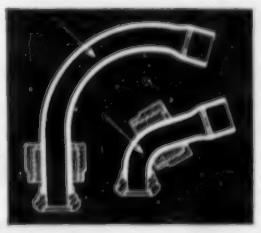
DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: in BRAZIL—Equipamentos Industriais, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Costelvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN - 701

Tube Talk — THE "HOW-TO" COLUMN

PROBLEM:
To find seamless tubing that was bright, free of scale, heat-resistant, and suitable for bending and swaging by Titeflex, Inc., Newark, N.J.



Application: 90° elbow fittings of high quality for aircraft and ordnance engine applications.

SOLUTION:
Superior Tube Company's 321 Stainless Steel Tubing—⅛" O.D. x .035" wall; purchased through local distributor.

RESULT: Superior 321 Stainless reduced rejections due to scaling, met rigid specifications, including bending and swaging requirements; withstood manufacturing heat of 1700°-1800°F.

Use of Superior tubing stepped up production and increased quality.

Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN - 702

DO YOU WANT THE FULL, MONEY-SAVING *Facts* ABOUT DOCKBOARDS?

THIS NEW FACTS FILE GIVES THEM TO YOU . . .

The new Magcoa **Facts File** is full of facts like these that you ought to have before you invest in a bridgeplate for your loading dock—

- **The actual costs of dangerous makeshift plates**
- **What other companies learned . . . *the hard way***
- **Why sixty multi-plant national companies standardized on Magcoa Dockboards**
- **What your local Magcoa Representative knows about your dock**

The new Magcoa *Facts File* is based on a study of what smart buyers demand (and get); gives you tips on net costs; talks in dollars and cents, specific facts . . . from your viewpoint. Write today for your free copy.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 703

CONSIDER WING
STEAM TURBINES
AS MOTIVE POWER

TO OPERATE
COMPRESSORS
GENERATORS
FANS
PUMPS
BLOWERS
WINCHES
MIXERS
ETC.

HERE ARE SOME ADVANTAGES:
VERSATILE—An infinite range of speeds
DEPENDABLE—Independent of electric power failures
ECONOMICAL—Cost little or nothing to operate if exhaust is utilized
NO SPARKS—For use in explosive or inflammable atmosphere
SMOOTH ACCELERATION OR DECELERATION—Can be smoothly accelerated or slowed down to meet the need of process, pump, fan or other driven apparatus.

OPERATING RANGES
H. P. to 150
Pressures to 600
Back Press to 50
Temp. to 750°
Speeds to 4000 RPM

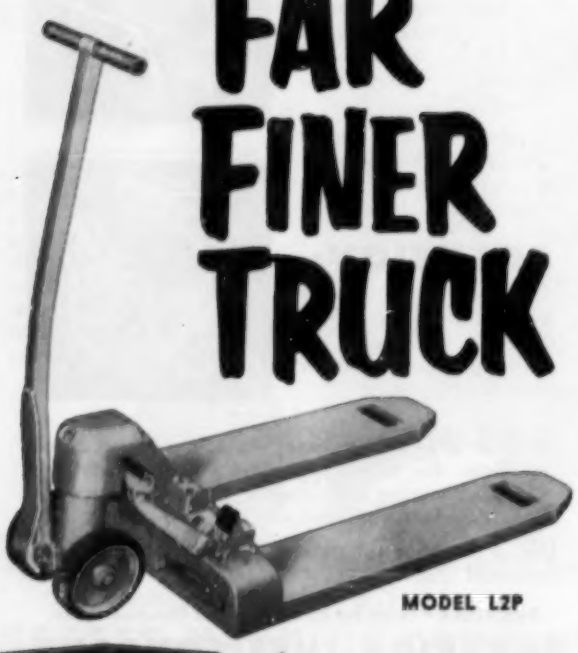
Wing Steam Turbines have been serving industry for over half-a-century

Write for Bulletin SW-1a

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N. J.

If you write maker identify as IEN - 704

For a few dollars more, you get a
FAR FINER TRUCK



MODEL L2P

RAYMOND *Lightweight*
PALLET LIFT TRUCK

● When buying a lift truck, don't be guided by price alone. Remember . . . performance is far more important. The RAYMOND Lightweight Lift Truck, for example, costs slightly more than similar trucks . . . yet there's a vast difference in how long and how well it performs!

● This 2,000-lb. capacity truck is constructed of only the finest materials, backed by 30 years of manufacturing skill. Nowhere in this RAYMOND Truck is quality compromised. The result is a rugged lift truck offering all these outstanding features:

ONE-PIECE WELDED FORKS . . . ⅓ times stronger than bolted fork construction.

CHROME PLATED PUMP PISTON . . . prevents leakage, prolongs pump life.

STRONGER CONSTRUCTION . . . heat-treated alloy steel ram pistons, axles, lever shafts.

HIGHLY MANEUVERABLE — FOOT PEDAL OPERATED
EFFORTLESS PALLET ENTRY — REINFORCED HANDLE
THOROUGHLY LOAD TESTED — DUAL PURPOSE BRAKE
FACTORY ADJUSTED LINKAGE — LIGHTWEIGHT

● *Mail This Coupon*

The RAYMOND CORPORATION
3523 Madison St., Greene, N.Y.

Please send me Bulletin 207, describing your 2,000-lb. capacity Lightweight Lift Truck, as well as your 4,000 and 6,000-lb. capacity Lift Trucks.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 706

SANDING . . Electric machine kit for roughing, finishing, polishing

Source: PORTER CABLE MACHINE CO.
27 Exchange St., Syracuse 8, N. Y.

For wood or metal

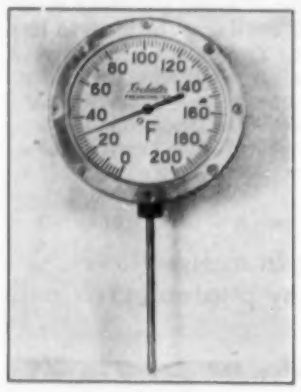
Model 120 is a new sanding kit. It includes a motor driven machine that oscillates a pad taking a ½-sheet of standard sand paper. The pad is driven in a ¼-in. orbital movement at 4,000 rpm. under load. The movement simulates hand sanding. The machine can be employed with various grades of abrasive, roughing and finishing. It operates on ac. or dc. at 110 volts. Weight is 6 pounds.

The kit includes felt, rubber and lambs-wool pads, 10 assorted abrasive sheets in Nos. 60, 100 and 150 grit, a spare drive belt, a 10-ft. extension cord, the required wrenches, and a steel carrying case.

If you write maker identify as IEN - 707

THERMOMETER . . Stainless steel, hermetically sealed 6 in. dial chamber

Source: ROCHESTER MFG. CO.
199 Rockwood St., Rochester 10, N. Y.

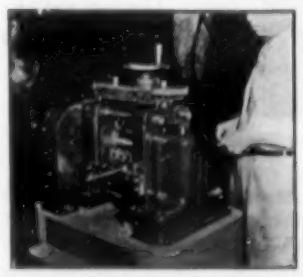


Smooth action

Model 1850 is a new straight form thermometer in which the external parts are made of stainless steel and the nut and stem are welded into a single unit. The surfaces are smooth, corrosion resistant, non-contaminating. An external calibration device is employed to set the pointer without breaking the seal.

The thermometer is available in stem lengths from 2½ to 48 in. and in standard industrial temperature ranges in an overall range between minus 90 and plus 1,000 deg. C. An oscillation dampener is included.

If you write maker identify as IEN - 708



Tube reducing to compact granular insulation, in electric heating element manufacture, is a new application for the miniature rolling mills built by Stanat Mfg. Co., 47-28 37th St., Dept. IEN, Long Island City, N. Y. The mill is available with 3 and 4-in. rolls riding on bronze bearings, or on roller bearings in the larger machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 709

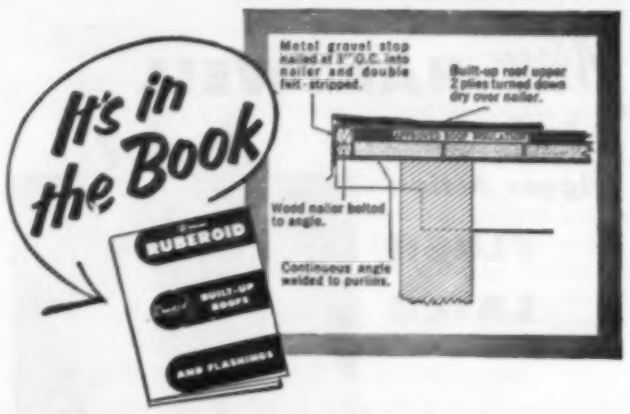
VARIABLE SPEEDS
Just turn a dial to get any rpm. Motor, speed changer and gear train all housed in one unit. ¼ to 50 h.p.

REQUEST VARIDRIVE BULLETIN

U.S. VARIDRIVE
THE MIRACLE MOTOR

U.S. ELECTRICAL MOTORS Inc.
Los Angeles 54, California — Milford, Connecticut

If you write maker identify as IEN - 710



The answer to all your roofing maintenance problems is in Ruberoid's Built-Up Roofing Specification Book. There's a complete specification with detail drawings, like the one above, to meet every condition—Smooth Surfaced Asbestos, Coal Tar Pitch or Special Bitumen with gravel or slag surfacing, and smooth or gravel-and-slag surfaced asphalt.

Because Ruberoid makes *every type* of built-up roof, Ruberoid roofers are not prejudiced in favor of any one type. Because Ruberoid has been a leader in the field for 60 years, you can depend on the right materials and the right specification through Ruberoid Approved Roofers.

Give your roof a thorough check-up now, *and write for Ruberoid's free Built-Up Roofing Specification Book. The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.*

The RUBEROID Co.
ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 711

NyGrip* CABLE CLIPS
*TM

Hold that wiring with these all Nylon cable clips

★ Lightweight ★ Tough ★ Strong
★ Chemically resistant
★ No metal to corrode or cause short circuits
★ Easy to apply ★ No sharp edges
★ May be used from − 60° to 250° F.

Send for samples and literature
WECKESSER COMPANY
5257 N. Avondale Ave. ★ Chicago 30, Illinois

If you write maker identify as IEN - 712

Specify **MEYERCORD DECAL** *Transfers*

—for difficult highly-specialized applications

—for long day-after-day production runs—

Meyercord Laboratory and Production Experience —PLUS Unexcelled Service—to Serve You *Better!*

Sometimes we are too prone to tell our friends about the spectacular achievements of Meyercord in solving those "impossible" decal transfer applications . . . like the new E-51 aircraft decals that resist up to 900 degree temperatures of jet engines, as well as the ravages of strong solvents and aircraft fuels. Specialized decal applications are a mighty important part of our business . . . but we're still first and foremost in the business of supplying standard Meyercord nameplate and identification decals. Whether you make typewriters, appliances, electrical conduit . . . any product that is turned out on long-time production runs, be sure to investigate the advantages of Meyercord decal transfer *uniformity, fine quality and absolutely unbeatable service* on your production line.

Send for This Manual of MEYERCORD DECAL NAMEPLATES

Shows hundreds of uses for durable, washable decal nameplates . . . as trademarks, instruction charts or diagrams—in any size, colors, or design. This manual is FREE . . . request it on your business letterhead, please.

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. N-318
5323 WEST LAKE ST.
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 713

METALPREP
Rust Remover and Metal Cleaner for Manual Application

Prep-n-Cote
Iron Phosphate Coating and Metal Cleaner for Industrial Washers

LYFANITE-Z
Zinc Phosphate Coating

PREP-PIK-L
Phosphoric Acid Pickling Process

LYFANITE-A
Corrosion Resistant Coating for Aluminum Alloys

GALVAPREP
for Zinc Coated Metals

ALUMIPREP
Metal Etching Cleaner for Aluminum Alloys

EMULSOPREP
Alkaline Cleaners

SEND FOR DESCRIPTIVE BULLETINS

These Products are Backed by 22 YEARS of Metal Conditioning Experience

NEILSON CHEMICAL CO.
MANUFACTURERS OF METALPREP

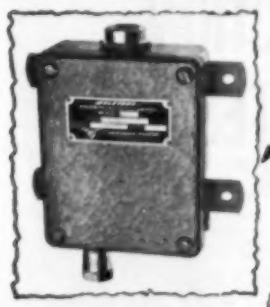
3692 Tecumseh Road Windsor, Ontario — 6584 Benson St., Detroit 7, Mich. — 3411 Union Pacific Ave. Los Angeles 33, Calif.

If you write maker identify as IEN - 714

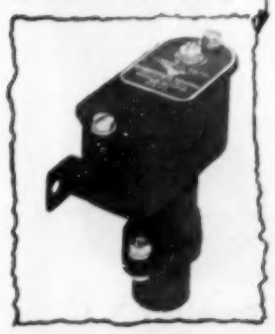
NOT AFFECTED BY VIBRATION

PRESSURE SWITCHES

Wherever a Vacuum or Pressure change must initiate electrical action there is a Meletron or Barksdale Pressure Switch to perform that function.



Diaphragm type sensing elements for vacuum and low pressure (to 120 psi), bourdon tube type for high pressure (to 12,000 psi), and piston type for high cycling rate.



They operate in any position and have extreme repetitive accuracy. Explosion-proof models available.

Write for Catalog 3G

BARKSDALE VALVES
5125 Alcoa Avenue, Los Angeles 58, Calif.

If you write maker identify as IEN - 716

BENDING . . Press brake control stops ram at any predetermined position

Source: AMERICAN ACTUATOR CORP.
40 Hudson St., Dept. IEN, New York 13, N. Y.

Brings ram to work

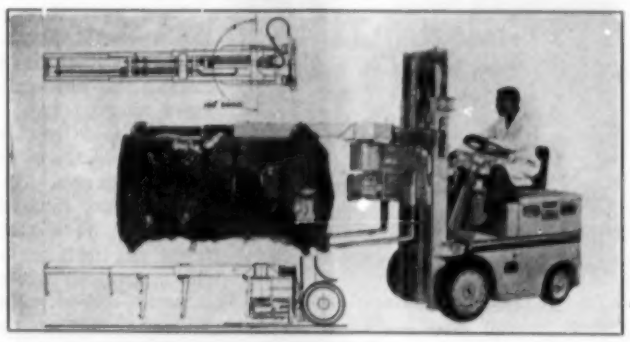
Operation of a press brake is centered at foot operated switch when this new AAC automatic control is installed. The switch actuates a solenoid to engage and disengage the clutch. The action is through a control panel and an adjustable switch that acts with the movement of the press ram.

A knob adjustment is employed to set the press to stop at any intermediate position short of the bottom of the stroke. The ram comes down to this point when the operator closes the foot switch circuit. It stops there until he releases the switch and closes it again. Then it continues to the bottom of its stroke and returns to stop at "up" position. The control can be cut out by setting a switch on the press for normal operation. List price, including installation, is $395 for presses to 50 ton, $495 for larger assemblies.

If you write maker identify as IEN - 717

TRUCK . . Swing attachment clamp reaches back of pile to pick up load

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Maximum reach 101 inches

A load to 600 lb. can be picked up or deposited, back of a previously deposited pile, by application of this new swinging attachment clamp on the company's Carloader power lift fork truck. The clamp is operated by two hydraulic cylinders to extend or retract the telescoping boom. Vertical arms on the boom can be adjusted both manually and hydraulically for loads of various lengths.

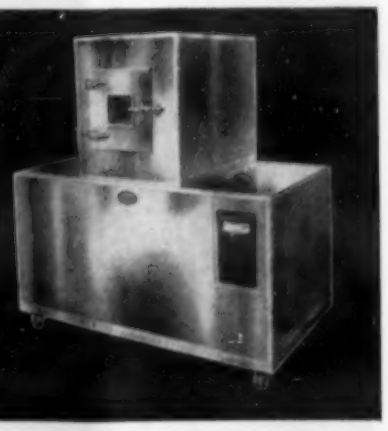
A hydraulic motor rotates the boom to 90 deg. on both sides of the truck axis. The standard controls on the truck raise and lower the boom on the fork carriage. The attachment is particularly suited to handle bales. It can be employed to mechanically up-end bales with its 30-in. regular forks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 718

WEBBER
TRADE MARK REGISTERED

TEST CHAMBER
WITH HIGH-TEMPERATURE, LOW-TEMPERATURE AND HUMIDITY

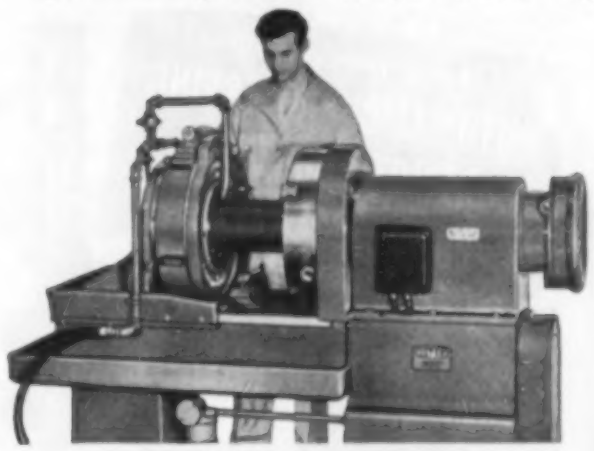


★ This Webber test unit, designed for production and experimental testing, has a temperature range from +250°F., to −100°F. The pull-down to −100°F., is achieved in 45 minutes, and can be cycled from −100°F., to +250°F., in 30 minutes. 95% relative humidity is provided at temperatures between 75°F., and 95°F. Vacuum equipment can be added to simulate high altitudes. The test chamber, provided with a moisture-proof light for illumination, is 4½ cubic feet, 20 inches high, 20 inches wide, 20 inches deep. High and low temperatures are governed by a temperature controller with scale range from −200°F., to +400°F., with a 3 degree control point differential, 1½ degrees plus and minus. The humidity is regulated by a wet and dry bulb controller. Unit size is 60" long, 45" wide, 74" high. Apertures in left side of cabinet provide for electrical cables to energize equipment being tested. Webber offers a complete line of test units for various applications.

Write for more complete information

INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE · INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 719



The OSTER "WILCO"

FAST...FLEXIBLE...EFFICIENT

The Oster No. 716 "Wilco" threads a wide range of pipe without die-head change. You can change sizes in seconds. A 2½" pipe, a 4" pipe, a 6" pipe, one die-head handles them all. Standard pipe range of the No. 716 "Wilco" is 1" to 6"; bolt range 1" to 4".

For the full story on the complete Oster line of threading machines, see your local Oster Distributor.

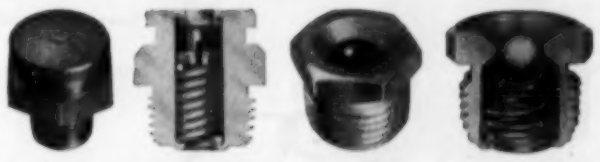
THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment since 1893

If you write maker identify as IEN - 720

There's All the Difference in the World in Grease Fittings!

Specify UNIVERSAL'S
New Giant Button Head or Flush Type Fittings



Streamlined One-Piece Design — Giant Button-Head Fitting, Plug Check — Streamlined One-piece Design — Giant Flush-Type Fitting, Ball Check

Note the practically indestructible one-piece construction, streamline design, positive seating of ball or plug check. Special spring design assures maximum clearance for free passage of grease. For a really modern, improved grease fitting, specify UNIVERSAL. Application engineering available promptly on request. Write now for complete information.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 ALLEGHENY AVE., OAKMONT, PA.

If you write maker identify as IEN - 721

NOW! Built-In Protection Against Reversing!

LINE-O-POWER WITH NEW BACKSTOP!

Newly designed, the Foote Bros. Backstop* is one more reason why Line-O-Power Drives are your best answer for tough jobs. The Backstop *positively* protects equipment against reverse rotation — Duti-Rated Lifetime Gears *positively* assure maximum power in minimum space.

**Optional for all standard straight line Line-O-Powers.*

BACKSTOP FEATURES
- Compact, Automatic, Wear-free
- Select without Service Factors
- Easily Changed for New Rotation

WRITE DEPT. IEN FOR DETAILS

FOOTE BROS. Gear and Machine Corporation
4545 South Western Boulevard
Chicago 9, Illinois

FOOTE BROS. Duti-Rated LIFETIME GEARING
This Trademark Stands for the Finest in Industrial Gearing

If you write maker identify as IEN - 722

Equip your valves for
AUTOMATIC PROCESSING
REMOTE CONTROL
POWER OPERATION

(Left) Ledeen Tandem Type Valve Actuator on Standard Plug Valve.

(Above) High Pressure Gate Valve with Ledeen Valve Actuator.

with

Ledeen VALVE ACTUATORS

These actuators are for the automatic operation of gate, diaphragm, plug and other line valves, and are pneumatically or hydraulically operated for direct or remote control. Designed as package units, they are mounted directly on the valves without need of special manifolds or outside supports. They are easily, quickly and rigidly installed on new valves or on valves in service.

Ledeen Valve Actuators provide positive operation, permit automatic processing, safety installations, multiple central control ,and require a minimum of maintenance. WRITE FOR BULLETIN 3000.

- Simple, Rugged Construction.
- Few Moving Parts.
- Easily Installed.
- Prompt Delivery.

AIR HYDRAULIC PUMPS & BOOSTERS
VALVES-CYLINDERS-VALVE ACTUATORS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN - 723

When you buy a bronze valve, take a good look at the hexes on the pipe ends. Is there room for a full grip with a wrench? Also, look inside an end to see whether there are enough threads to prevent jamming the valve seat when pipe is installed. Look at the parts where weight counts -- pipe ends, centerpiece, neck of body -- and make sure they are heavily made. Grip the handwheel to see how easily it fits your hand.

You'll find all the best features in any O-B valve.

OHIO BRASS COMPANY MANSFIELD OHIO

Ohio Brass VALVES
MANSFIELD OHIO

If you write maker identify as IEN - 724

FLOW STOPPAGE COSTS MONEY!

Have you ever figured how much flow stoppage costs you in:

- LOST STORAGE CAPACITY?
- LOST MAN-HOURS?
- LOST PRODUCTION TIME?

PneuBin will solve your flow stoppage problems and help reduce your operating expense. When materials hang-up in your bins and hoppers, PneuBin starts them flowing again. The PneuBin unit consists of a steel-backed neoprene panel, mounted on the inside wall of your bin. By the pneumatic inflation and deflation of the panel, the bin contents are displaced and disturbed to activation. After the diaphragm has collapsed, the air control unit (operating off the regular plant air supply) starts another cycle of inflation and deflation. The process continues automatically at whatever frequency is set on the air controller.

Because the neoprene panel is resistant to oils and most chemicals and is also thick and tough enough to withstand severe abrasive service, PneuBin is applicable to most any bin flow problem.

Send for "Flow Stoppage Report" and free literature. PneuBin engineers will gladly make recommendations, with no obligations on your part.

PneuBin is a product of

GEROTOR MAY CORP. • BALTIMORE 3, MD.

Manufacturers of GEROTOR HYDRAULIC PUMPS & MOTORS

If you write maker identify as IEN - 725

HEATING . . Gas fired space unit delivers 32,000 btu. at 790 cfm.

Source: GENERAL GAS LIGHT CO.
250 N. Park St., Kalamazoo, Mich.

Bulletin Model 40-G

Model 40-G is a new unit in the company's line of gas fired space heaters for service where moderate capacity is required. It measures 17 by 18½ by 22½ in. overall. Air delivery velocity is at 705 fpm. from its 12-in. motor driven fan. The fan operates at 1,550 rpm.

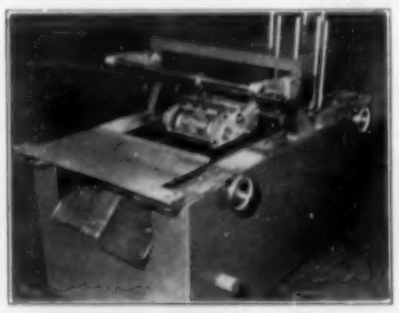
A burner with raised ports fires into the bottom of a 6-tube alloy steel heat exchanger. Products of combustion move upward to leave the heater housing at the rear near the top. Air passes between the tubes to issue through the louver equipped front. This part of the assembly is a single hinged unit. It moves outward at the top to the direct air downward without shutting off any of the open area.

The company's stainless dust proof pilot is standard in the construction. Equipment includes a positive safety pilot valve that shuts off gas to the main burner in the event of pilot outage and an overload control to protect operation.

If you write maker identify as IEN - 726

MARKING . . Roll type machine prints identification on flat objects

Source: ADOLPH GOTTSCHO INC.
6-D Terminal Road, Hillside 5, N. J.



Sharp, clean marks

New assembly of the Type-3M Markocoder is adjustable to handle flat objects in sizes ranging from 2 by 2 in. to 9 by 9 in. and from 1/16 to ¼ in. in thickness. The mechanism removes one piece at a time from the bottom of the magazine, carries it under a feed roller and then under the printing roller to a tote box or conveyor. Copy changes are made quickly on the interchangeable rollers. Speed is to 60 units per minute. The machine employs fast drying of ink of specified color.

If you write maker identify as IEN - 727

Mass production has made possible a reduction in price of the nylon FM-10001 balls made by Ace Plastic Co., 91-24 Van Wyck Expressway, Dept. IEN, Jamaica 35, N. Y. The balls are available in sizes from ⅛ to ¾ inch. They now list at $15 to $262 per thousand in lots of 1,000. Uses are in valves, detents, checks, bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 728

TIME CONTROL WITH SPLIT-SECOND ACCURACY

LEKTRA

TM-5 Electronic PHOTO TIMER

$30.00

(no excise tax)

First in split seconds!

First in performance!

No more clockwork or guesswork to bog you down. No more mechanical failures to hike production costs. Only the LEKTRA Electronic Photo-Timer gives you: AUTOMATIC SPLIT-SECOND TIMING . . . PRE-SET CONTROL for accurate, repeat timings . . . SWITCH CONTROL for focus and timing . . . PRECISION-ENGINEERED DESIGN for the exacting requirements of color separation, color prints and exposures . . . GUARANTEED PERFORMANCE plus warranty.

Write for illustrated catalog of LEKTRA Electronic and Synchronous Motor Timers

LEKTRA LABORATORIES, INC.
Manufacturers and Developers of Electronic Equipment
154 11th Avenue New York, N. Y.

If you write maker identify as IEN - 729

Vibration-proof Fastening—with BIG SAVINGS

PALNUT
TRADE MARK
LOCK NUTS
for quick, secure fastening at low cost

- —cost less than plain nuts
- —eliminate lockwashers
- —speed up assembly
- —save space, weight
- —may be re-used

Check all your light duty nut-and-screw assemblies against the speed, savings and security of double-locking PALNUT Lock Nuts. Especially adapted to easy, fast power driver assembly of mass-produced items. Lock as they tighten, stay tight under severest vibration. Millions used monthly on all types of light assemblies.

★ For Free Samples, send details of assembly, screw size, etc. Ask for latest catalog showing complete line, uses, etc.

THE PALNUT CO.
59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ont.

If you write maker identify as IEN - 730

ITS FELT TIP WRITES ON EVERYTHING!

in BOLD or *fine* lines

Marking steel drums, tools, parts, pipes, etc. is smooth sailing with the Flo-master Felt-Tip Marker.

The complete range of ten colors in Flo-master Inks permits speedy and accurate identification for assembling, stocking, inspecting.

Flo-master semi-opaque inks — waterproof, non-smudging, fast-drying — are recommended for hard-to-mark surfaces using the KING SIZE Flo-master. For general purpose marking—cartons, cases, etc—use Transparent Inks with POCKET SIZE Flo-master (illustrated).

Contact your supplier or write direct to Cushman & Denison Manufacturing Co., 153 West 23rd Street, New York 11.

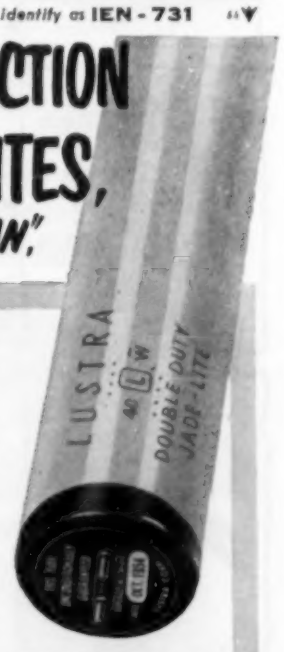
Flo-master
FELT-TIP MARKER

If you write maker identify as IEN - 731

"FASTER PRODUCTION WITH JADE-LITES,

thanks to the ***LUSTRA MAN,***

[*says The Philadelphia Thermometer Co.*]



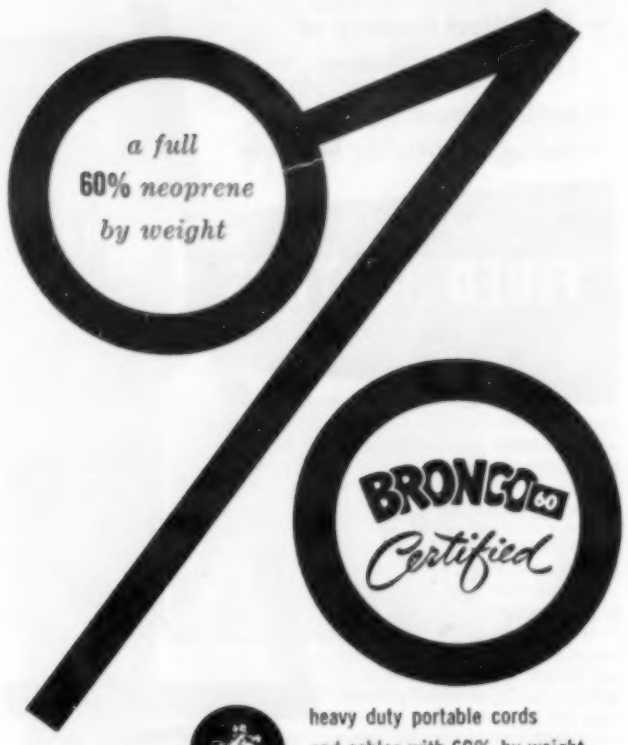
Mr. L. W. Scanlan, General Mgr., reports: "Ordinary fluorescents in our production department caused annoying glare. Our local Lustra Man suggested Lustra Jade-Lite Fluorescents which eliminated both glare and eyestrain and speeded production importantly."

Your local Lustra Man can solve your lighting problems, too . . . and save you money at the same time. Write for literature giving the whole Lustra story. Lustra Corporation, Dept. P-1, 36 Washington St., Brooklyn 1, N. Y.

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOT-LITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 732



heavy duty portable cords and cables with 60% by weight neoprene jackets

sold nationally by leading electrical wholesale distributors

Western Insulated Wire Co. • Los Angeles 58, California

If you write maker identify as IEN - 733

NEW MODEL M

SERVIS RECORDER

electrically records productive and down time of industrial machines

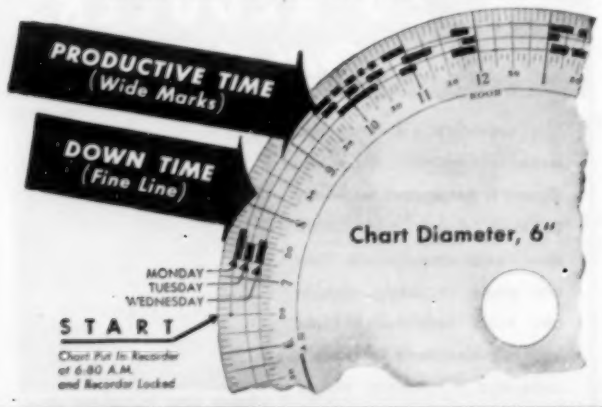
Mount Model M Servis Recorders on the wall of your office or any other convenient place, then just connect them by wire to your machines.

FEATURES INCLUDE...

- Visible Recording
- Location anywhere—distant from machines
- Far Lower Cost than comparable devices
- No ink—no pen to obscure chart
- Available with Elapsed Timer or Counter

THE CHART (sample portion below) instantly shows ALL stops and delays. So you can reduce down time, increase production, and thus repay the cost of Servis Recorders *many times over!* Model M is also valuable in time studies to set rates and as a check on the exactness of process operations.

WRITE FOR "MODEL M" FOLDER

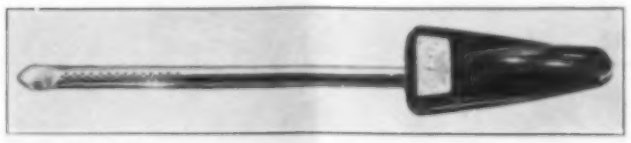


THE SERVICE RECORDER CO.
1375B Euclid Avenue • Cleveland 15, Ohio

If you write maker identify as IEN - 735

TESTING . . Hygroscope checks suitability of paper to print

Source: CAMBRIDGE INSTRUMENT CO.
3710 Grand Central Terminal, New York 17, N. Y.



Minimizes spoilage

The scale on this new hygroscope reads to plus and minus 20 on both sides of zero in terms of relative humidity. The instrument meets specifications of the Lithographic Technical Foundation for application in testing relative humidity of paper as a means to determine its suitability for use in a lithographic press.

Application starts with setting the scale to zero by turning a knob on the handle while the instrument is held in the air. Then it is thrust into a pile of paper and the reading is taken. Experience has shown that the best printing conditions exist when the reading is 5 to 8 per cent above room humidity.

If you write maker identify as IEN - 736

LUBRICATING . . Molybdenum disulfide grease for heavy loads

Source: ALPHA CORPORATION
177 Hamilton Ave., Greenwich, Conn.

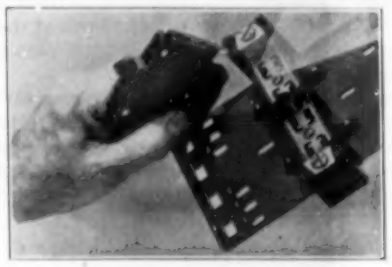
Technical data upon request

Molykote Type BR2 is a new compound of molybdenum disulfide powder and lithium base. It forms a lubricating grease for heavily loaded ball and roller bearings and also for sliding friction surfaces. Operating range is between minus 30 and plus 350 deg. F.

If you write maker identify as IEN - 737

CIRCUIT BREAKER . . Unit pole design, 15 and 20 amp. ratings on 110 volt ac.

Source FEDERAL ELECTRIC PRODUCTS CO.
55 Paris St., Newark 5, N. J.



Bulletin CB-1000 A

Type NC is new design of the Stab-lok thermal magnetic circuit breaker, previously described IEN-8011-50. Width is approximately one-half that of the original unit so two of the new Type NC occupy the same space as one original breaker.

Installation is on a new enclosed bus bar circuit in which a Magic-E slot takes two of the new units, or one of the old ones, so there is no obsolescence of existing stocks. The breaker opens at a predetermined point on light overloads as well as heavy overloads and severe shorts. Its operating handle moves to "off" position. It is moved back to "on" when the trouble is cleared.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

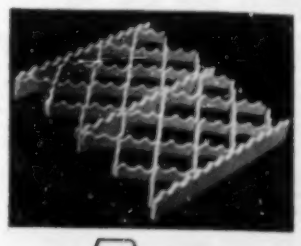
If you write maker identify as IEN - 738

GREASE . . . OIL . . . WATER . . . ICE . . .

YET NO SKIDDING or SLIPPING

Bustin
FIRM-GRIP
SAFETY GRATING
for floors, steps, platforms, ramps, ladders, etc.

Now . . . cut down accidents and lost manhours caused by slips, skids and falls. Install Bustin Firm-Grip — the new anti-slip grating that eliminates dangerous walking conditions . . . guarantees sure footing . . . and is so easy to maintain.



*Pat. Pending

Write for Complete Literature

Bustin FIRM-GRIP GRATING CORP.

Dover, New Jersey Dover 6-8800

"BUSTIN—Designers and Manufacturers of Metal Products Since 1928"

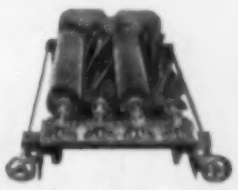
If you write maker identify as IEN - 739

TO THE INGENIOUS
Not familiar with this
NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.



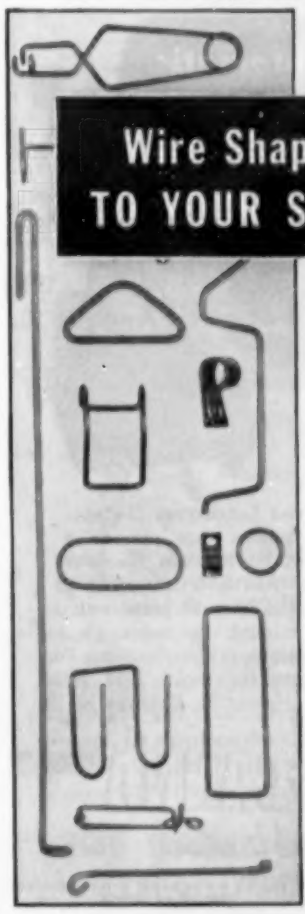
The economy of continuous operation made possible by continuous scrubbing to remove hard baked deposits from steel conveyor in bake oven. Power driven unit applies action through two types of Fullergript brush strip.

INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 740



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 741

IT COSTS LESS TO USE THE BEST!

PLS

1. Takes less PLS to give a perfect seal.
2. One compound for many services: water...oil...gas...steam...chemicals...petroleum products—low and high pressures.
3. Never washes out—one application lasts forever.
4. Never hardens: joints may be easily broken after years of service—no damaged connections.

Prove it to yourself. Send for a free sample. Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Ill.

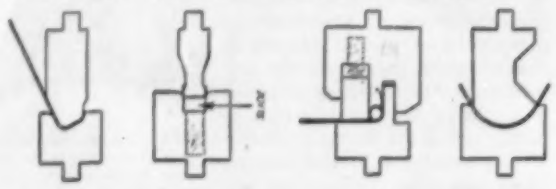
JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 742

famous "34 year"

BRAKE DIES

ANY SPECIAL SIZE OR SHAPE CAN BE DEVELOPED BY OUR EXPERIENCED ENGINEERS



Made by the makers of SEMCO PRESS BRAKES (6ft.—8ft.)

Write for new literature showing 26 Standard Brake Die styles and 2 sizes of low priced Press Brakes.

SEMCO

SERVICE MACHINE CO., INC.

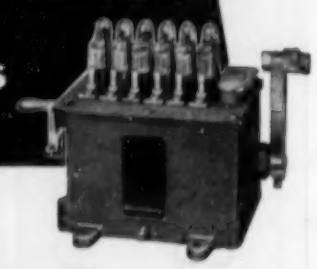
200 MILLER STREET • ELIZABETH 4, N. J.

If you write maker identify as IEN - 743

For Positive Automatic Machine Lubrication use

HILLS-McCANNA

FORCE FEED LUBRICATORS



● Hills-McCanna Force Feed Lubricators are specially designed oil line pumps that provide a positive automatic flow of oil to even the most difficult-to-lubricate spots. Available in open or enclosed types in sizes from 2 to 32 pints with 1 to 48 feeds. Oil flow through the lubricator is exactly controllable to meet your specifications. For complete information, write for catalog L-52. Hills-McCanna Co.—2347 W. Nelson St., Chicago 18, Ill.

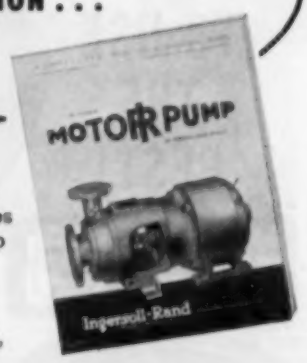
HILLS-McCANNA

force feed lubricators

Also manufacturers of Saunders patent valves • chemical proportioning pumps • magnesium alloy sand castings.

If you write maker identify as IEN - 744

YOUR *Guide* TO PUMP SELECTION . . .



The new Ingersoll-Rand catalog for pumps in the 5 to 1800 gpm range helps you select the right pump for practically any application.

Performance data, engineering data, weights, dimensions, discharge positions, typical pump problems—there's everything to make pump buying and pump specifying easy. Drawings, photographs, cutaways show you what to look for to get maximum pump efficiency.

Get your copy today. Use the coupon below.

INGERSOLL-RAND 874-9
11 BROADWAY, NEW YORK 4, N. Y.

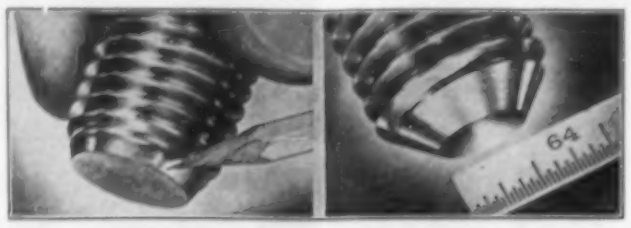
Please send me your new pump catalog No. 7093-D.

Name.....
Company.....
Address.....
City.....Zone.....State.....

If you write maker identify as IEN - 745

FASTENINGS . . New point design for company's cap and set screws

Source: ALLEN MFG. CO.
113 Sheldon St., Dept. IEN, Hartford 2, Conn.



Alleroy, stainless steel, NC or NF threads

Tapered, flat end, unthreaded leader point is now standard design on the company's line of set screws as shown to the left in the illustration. The new point protects the screw threads and also the threads in a hole against injury. It assists in aligning, particularly in inaccessible locations. It prevents thread damage upon dropping a screw on a hard surface.

To the right in the illustration is a new small cup point now carried in stock in addition to the previously developed lines of oval, flat, cone and dog point set screws. The point is characterized by uniformly high shaft holding power, in torque resistance tests, by its ability to make a complete shaft contact pattern and to hold against vibration.

If you write maker identify as IEN - 746

TRUCK . . Roll deck trailer receives loads from a conveyor line

Source: MERCURY MFG. CO.
4132 S. Halstead St., Chicago 9, Ill.

Built to order

Two sets of rollers, about 2 in. in diameter by 30 in. in length, are mounted in the 49 by 72-in. top of this new trailer. The rollers ride free to receive loads from a conveyor line. The are locked by operating a lever at one end of the truck. Then they cannot rotate and the load is held in stable position for movement to a new location.

The truck frame is mounted on rubber tired wheels measuring 8 in. at the front swivel units and 10 in. at the rear. Safety self-couplers are employed at the two ends to complete the assembly. The truck top stands 30 in. above the floor. It rates a 1½-ton load and is known as Type A-308-78M.

If you write maker identify as IEN - 747

Shrinkage, after casting, is within 0.001 in. per in. for the plastic, Calcerite-A. It cures at room temperature, following mixture with catalyst ZN-1, to a hard dimensionally stable material. It is suited particularly to manufacture duplicating patterns for Keller and Gorton duplicating machines. Furane Plastics, Inc., 4516 Brazil St., Dept. IEN, Los Angeles 39, Calif. has prepared a process bulletin on the subject and will send a copy on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 748

YOU CAN'T BEAT GARRETT

STAMPINGS

Save time, trouble and expense by making Garrett your sub-contractor on small and medium metal stampings. Garrett has the "know-how" to meet your most rigid specifications. Three modern plants, automatic high-speed presses up to 150-ton capacity, and up-to-date tool shop provide highest quality of workmanship. Finishing equipment includes tumbling, polishing, heat treating and plating.

To speed production, reduce costs, improve quality, make Garrett your headquarters for metal stampings.

Garrett OF PENNSYLVANIA

GEORGE K. GARRETT COMPANY, INC. PHILA. 34, PA.

If you write maker identify as IEN - 749

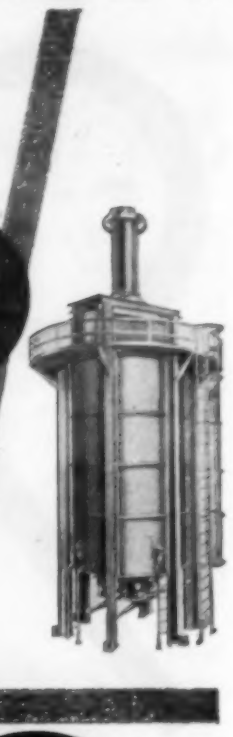
★ For Direct Heating of Liquids and Vapors

★ Indirect Heating Systems Using Circulating Medium

Struthers Wells

FIRED HEATERS

for the Process Industries



Struthers Wells direct fired heaters are available in sizes from 100,000 to 25,000,000 BTU per hour, for heating gasoline, oils or asphalts, superheating steam or gas, and for indirect heating systems.

Struthers Wells indirect heating systems give economical—trouble-free operation at temperatures to 750° F., or above.

If your process requires temperatures above those of existing steam supply—if steam is not available, or if the process can be improved by higher temperatures, investigate this simple and economical equipment.

Struthers Wells

STRUTHERS WELLS CORPORATION
Warren, Pa.
PLANTS AT WARREN, PA. • TITUSVILLE, PA.
Offices in Principal Cities

If you write maker identify as IEN - 750

GET THIS GUIDE *to Standard or Special* NAYLOR FABRICATED FITTINGS

This handy Naylor Bulletin No. 525 offers helpful information on standard fittings for lightweight pipe and facts on special fabrications built accurately to your specifications. Sizes range from 3" to 44" in diameter and wall thicknesses up to ⅜". All types of materials. Write for your copy of No. 525 today.

NAYLOR PIPE COMPANY

1235 E. 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Ave., New York 17, N.Y.

If you write maker identify as IEN - 751

D. O. James

Established 1888

Continuous-tooth

HERRINGBONE GEAR SPEED REDUCERS

The Gear With the Backbone

The operating efficiency and dependability of these reducers is continuous testimony to their design and inbuilt qualities of manufacture. They are made in single, double and triple reductions—come in many sizes and in a wide ratio and horsepower range.

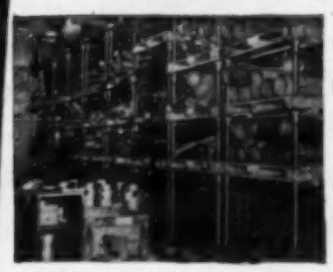
SEND FOR CATALOG 40-C

D. O. JAMES GEAR MANUFACTURING CO.
1140 WEST MONROE STREET • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 752

"Saved Cost of New Warehouse" says PALTIER USER

Paltier STORAGE SYSTEM



increases storage space up to **75%** and more — decreases man handling as much as **75%**

ASK US: PALTIER studies your storage problem —engineers and designs a system for your specific needs.

Many PALTIER installations pay for themselves "right from the start."

This booklet tells the PALTIER story, ask for it today.

THE PALTIER CORP.
1711 Kentucky St., Michigan City, Ind.

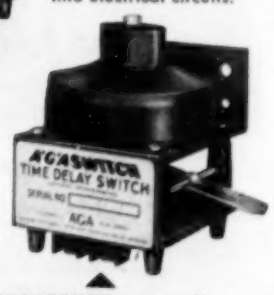
If you write maker identify as IEN - 753

SUMMING UP

. . . here are the new products introduced by AGA in the past four months. Watch for the most important advance in 50 years of pneumatic timing —to be announced by AGA in the near future.

AGASTAT Model SF Compact, hermetically sealed time delay relay.

AGASTAT Model NET For the introduction either of a series of time delays or a momentary impulse into electrical circuits.



AGASWITCH For manually or mechanically introducing time delays into electrical circuits.

AGASTAT Model NEH For remote push-button control of time delays.

WRITE for details on these pneumatically timed solenoid-actuated time delay relays. Ask our application engineers for help with your timing problem. Address Dept. A12-12.

AGA DIVISION

Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing.

If you write maker identify as IEN - 755

GAGE . . Electronic instrument reads surface roughness in microinches

Source: MICROMETRICAL MFG. CO.
343-47 S. Main St., Ann Arbor, Mich.

Bulletin LT86

Type QA Amplimeter is a new development in the company's Profilometer line of surface roughness instruments in which an amplifier is employed to select any of six ranges of sensitivity. These read 3 to 1,000 microinches maximum. The new instrument applies with any of the previously developed tracing equipment. It provides a plug-in receptacle in the front face for the tracer cable.

Construction includes a color coded range selector switch that corresponds with two color coded scales on the illuminated dial, a selector switch for RMS or arithmetical average roughness readings and an "on-off" switch for the 110-volt operating power circuit. The light illuminates the meter when the circuit switch is in closed circuit position. Assembly is in a dust tight metal housing that measures about 8 by 10 by 15 inches.

The amplifier is not affected by normal temperature changes or by line voltage fluctuations between 90 and 130 volts. It is not sensitive to mechanical shock or vibration. Accuracy is checked by tracing a rated roughness specimen that is furnished as a part of the standard equipment. This specimen will be replaced without charge. A storage compartment in the top of the housing holds the tracer cable and other accessory equipment. Assembled weight is 24 pounds.

If you write maker identify as IEN - 756

GRINDING . . Motor driven machine to rough and finish carbide tools

Source: STANDARD ELECTRICAL TOOL CO.
2489 River Road, Cincinnati 4, Ohio

Vari-Tool Finisher

Silicon carbide cup wheel, 6 in. in diameter, mounts on the left hand side of this new machine for rough grinding operations on carbide tools. The wheel is plate mounted and is protected by a steel guard adjustable for wheel wear. The right hand side mounts three pulleys to take a silicon carbide abrasive belt in standard 4 by 54-in size. Tension can be adjusted by turning a screw. A steel guard also protects this belt except for that portion which rides vertically over a carbide backing plate.

Adjustable work tables are mounted at the two wheels to support the work at correct angles for end, top and side. Table dimensions are 10 by 7 inches. Drive is by a ¾-hp. 3,600-rpm. motor with forward and reverse control. The machine is mounted on a floor stand.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 757

Ask us to explain why *ENGINEERED* SPONGE GASKETS are different!

For example take this gasket. Instead of punching it out in one piece, with the center material wasted . . .

we die cut it in sections, saving over half the material, then permanently weld the sections into a single piece.

Many another gasket problem has been engineered by us into a better product at surprisingly lower cost. Specialists in chemically blown sponge, PVC sponge, silicon sponge, foam rubber, neoprene and cork gaskets, we invite your inquiry for any gasket need.

J. M. CRANZ CO. INC.
2671 MAIN ST. BUFFALO 14, N. Y.
ENGINEERED MOULDED RUBBER PRODUCTS

If you write maker identify as IEN - 758

BALL BUSHING

The BALL BEARING for your

LINEAR MOTIONS

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS. Now manufactured for ¼", ½", ¾", 1", 1¼", 2" and 2½" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I, MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

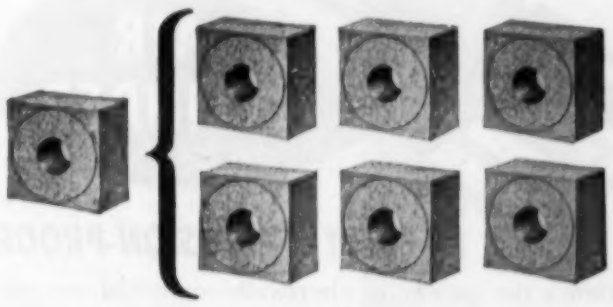
Also manufacturers of NYLINED Bearings — DuPont NYLON with-in a metal sleeve — for rotation and reciprocation.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as IEN - 759

B&W KAOCAST

Last 3 to 6 times longer



Used for burner blocks, B&W Kaocast stayed on the job 3 to 6 times as long as previous refractory...and this 3000F refractory castable is still going strong.

Kaocast is versatile, too...eliminates need for inventory of special shapes. It can be molded quickly by you, when you need it, directly in place or applied by cement gun. Put B&W Kaocast to work in your plant. Get all the facts from your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

If you write maker identify as IEN - 760

Here's a small, sturdy new air regulator that keeps line pressures dependably accurate — at a surprisingly low cost.

It has large capacity at all pressure settings. Responds instantly to increases in demand with minimum pressure drop.

Compact, it requires little space and is easy to install. Servicing may be done with valve in the line.

Initial pressures up to 250 lbs. reduced to any pressure between 5–60 lbs.; 60–100 lbs. Sizes ¼" to ½" with brass body. 2½" gauge included.

See your Mason-Neilan Industrial Distributor

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 761

Dollar and Cents Angle

on Fafnir Sealed Ball Bearings

Figure it out yourself . . . you may be able to cut manufacturing costs by using one of the several types of Fafnir Sealed Ball Bearings.

These bearings simplify assemblies, cut out machinery operations and eliminate extra parts otherwise needed to provide and retain lubricants.

Find out . . . call in a Fafnir representative. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 762

ELECTRICALLY-CONTROLLED

IS FULLY *EXPLOSION-PROOF*

Here's the answer to electrically-controlled air cylinder operation in explosive hazardous areas: The Bellows BEXM Explosion-Proof Air Motor.

It meets fully group D, Class I Standards of the National Board of Fire Underwriters.

Made in five bore sizes: 1¼", 1¾", 2½", 3⅝" and 4½" — any stroke length — with valve directly connected to the air cylinder or arranged for remote control.

Write for Bulletins AVX-310 and CL-50 today. Free on request. Address Dept. IEN 154.

820A

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 763

NEW DOUBLE UTILITY

Ideal Lighting for Assembly Repair and Inspection Benches

FOSTORIA LOCALITE

MODEL T8HX600
$9.80 LIST

Overall length 27½" with 18" flexible steel tubing arm

DIRECTS LIGHT EXACTLY AS NEEDED

DUPLEX OUTLET IN BASE for plug in of electrical tools, glue pots, etc.

Clamps to bench or cabinet back rail, or mounts on flat surface.

Reflector rotates 360° Accommodates A-21 medium screw base lamp including 100 watt.

Illumination — medium asymmetric in excess of 150 footcandles from 100 watt lamp 12" above work area.

Wired Complete with medium screw keyless porcelain socket and 6 ft. SJ extension cord. Toggle switch in base. Duplex outlet wired to be constantly hot with lamp on or off.

Finish — exterior smooth Gray baked enamel—reflector interior high temperature White.

*Write for complete catalog of Localite models for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO

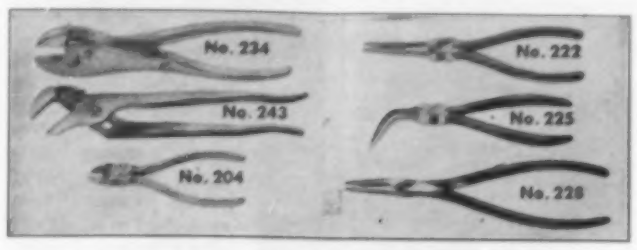
Localites are available through wholesalers everywhere

LOCALITE fostoria for Light ON the Job

If you write maker identify as IEN - 764

PLIERS . . Forged steel tools for production, maintenance, servicing

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



Detail specifications upon request

Number 234, in the illustrated collection of six new pliers, provides a 10 to 1 leverage between the handles and the jaws. It opens to 1½ in. and is 8 in. in length.

Number 243 is a 9½-in. multiple groove design to position the jaws in any of five openings to 1½ inches. The jaw tips are an equal distance from the plier body in any position.

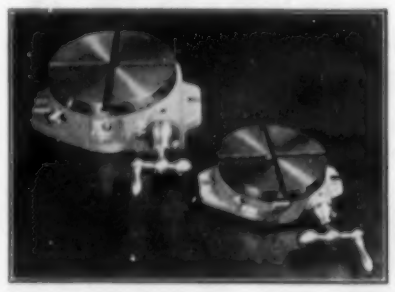
Number 204 is a 4½-in. rigid diagonal cutting plier. Its matched cutting edges are induction hardened.

Number 222 is a 6½-in. needle nose plier to get into restricted locations. Number 225 is a 6-in. unit, the same as 222 except that its nose is bent to a 79 degree angle. Number 228 provides extra long reach with good leverage.

If you write maker identify as IEN - 765

INDEXING . . Rotary work tables, 6 and 8 in. sizes, hand operated

Source: BENCHMASTER MFG. CO.
1833-37 W. Rosecrans Ave., Gardena, Calif.



Clamp screws included

New table, measuring 8 in. in diameter by 3⅝ in. in overall height, has been added to the company's previously developed 6-in. by 2⅛-in. assembly. Both are designed for work positioning and manipulating on machine tables.

Construction includes a steel worm mounted on an eccentric so the worm can be dis-engaged from the gear to permit the table top to turn freely. Ball thrust bearings eliminate backlash between the worm and gear. Provision is made for take-up due to wear. An adjustable zeroing mark permits setting the table for any starting position. Dial graduations are 0.1 degree.

If you write maker identify as IEN - 766

Scholarship award has been set up by Denison Engineering Co., 1160 Dublin Road, Dept. IEN, Columbus 16, Ohio. The award will go annually to one or more graduates of high schools in Columbus who are in the upper third in scholastic average and who want to study hydraulics or take engineering with special emphasis on hydraulics. Winners can choose the college.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 767

FREE SAMPLE KIT PROVES BIG TIME SAVINGS!

SEMS-by-SHAKEPROOF

Tedious separate lock washer handling is completely eliminated. Specially designed SHAKEPROOF* Lock Washers are **pre-assembled** to screws —two parts are handled as one! Held on by the rolled thread, the washer can't drop off!

SEND FOR FREE TEST KIT NOW!

*T. M. REG. U. S. PAT. OFF.

SHAKEPROOF
"Fastening Headquarters"
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

If you write maker identify as IEN - 768

HOW to remove FLOOR STAINS

Free HUNTINGTON BOOKLET

Here's a booklet that tells you how to remove stains from every type of floor! Results are better and it's easier when you follow the proved methods in Huntington's new booklet, "How to Remove Floor Stains." Write today, on your company letterhead, for your free copy.

HUNTINGTON LABORATORIES, INC.
Huntington, Indiana — Philadelphia • Toronto

If you write maker identify as IEN - 769

SAVE ON VENTILATION

Powerful, New

HUNTER *Direct-Drive* INDUSTRIAL FAN

Built for efficient performance, long life, simple maintenance.

HIGH PRICED FEATURES AT LOWEST COST

Motor — Heavy, continuous-duty R&M "All-Weather" motor. Totally enclosed. Ball bearing. Permanently lubricated and sealed. Explosion proof motors on special order.

Blades — "Gull Wing" Design airfoil blades for maximum strength and uniform pressure. Made of aluminum alloy – non-rusting, non-crystallizing, non-overloading.

Frame — Square steel frame is easily mounted. Streamlined orifice gives 15% to 18% more efficiency.

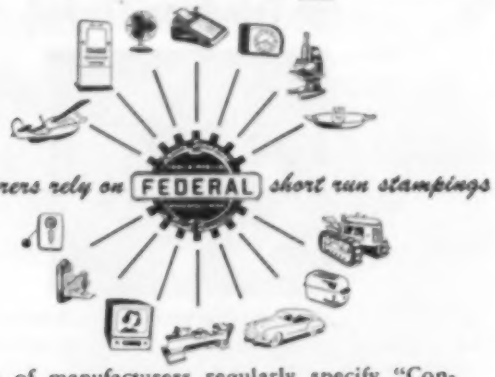
General — Effective up to ¾ in. static pressure. Direct drive for reduced maintenance cost. Automatic shutters to fit all sizes.

Hunter SINCE 1886

For new Basic Data Folder, write
HUNTER FAN AND VENTILATING CO.
373 S. Front Street, Memphis 2, Tenn.

If you write maker identify as **IEN - 771**

From Accounting machines to Zymometers



Thousands of manufacturers regularly specify "Controlled Tolerance" stampings by Federal. Industry has come to depend on Federal's complete die-making facilities, product quality, and prompt customer service. A one-stop stamping service, Federal stamps any stampable material (metal, fibre, phenolic or plastic) in any shape or size up to 9" x 12" and up to 3/16" thick, in any quantity from 2 pieces to 10,000.

see our catalog in S PRODUCT DESIGN FILE or write for copy

Bulletins 101 and 161 detail Federal's complete stamping service. Write for them. Better yet—send us a print of the stamping you want fabricated and the quantity needed. We will return, promptly, a quotation for the highest quality stampings at the lowest possible cost.

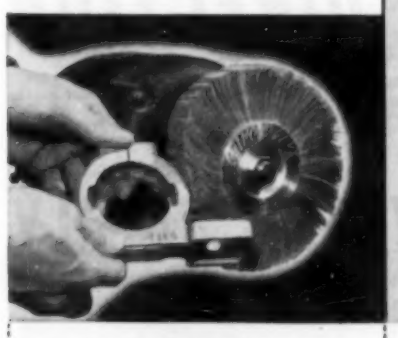
LIMITED QUANTITIES—UNLIMITED SERVICE

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as **IEN - 772**

Hoffman Laboratories reports: "Many hours have been saved since deburring with GRIND-O-FLEX"

FLEXIBLE GRINDING WHEEL



Hoffman Laboratories, Inc., Los Angeles, a subsidiary of Hoffman Television, uses Grind-O-Flex for deburring and removing die marks from pressed aluminum cover panels for electronic equipment. Grind-O-Flex did the job better and faster than any other method. Hoffman has also put Grind-O-Flex to work in the machine and plating shops for general polishing and deburring work.

Hoffman LABORATORIES, INC.

November 3, 1953

Merit Products Inc.

Gentlemen:

Use of your Grind-O-Flex wheel has proven of great value in the preparation of sheet metal components for further processing, not only as a means of deburring, but also for the removal of die marks on surfaces to be painted.

Through its application many man hours have been saved, yet a high quality finish has been maintained. Its uses are varied, and more are being found each day.

Very truly yours,
HOFFMAN LABORATORIES, INC.
M. A. Southard
M. A. Southard
General Foreman, Machine Shop

Grind-O-Flex is new. There is nothing like it. It consists of hundreds of individual strips of abrasive cloth sealed to a core. When rotated on an arbor it becomes a flexible abrasive wheel for light grinding and metal finishing. It will not dig into surfaces or "flat" contours. Wheel is 1" wide by 6½" diameter and comes in a choice of grits from coarse (for light grinding) to very fine (for polishing). No special equipment is needed, no belts to change, no adjustments to make, no compounds to handle. Mount Grind-O-Flex to a motor shaft or to your power tools (¼ HP is adequate). Write for complete information and prices.

MERIT PRODUCTS, INC.
4023 IRVING PLACE, CULVER CITY, CALIFORNIA

If you write maker identify as **IEN - 774**

PROTECTING . . Twin respirator changes for dusts and organic vapors

Source: CHICAGO EYE SHIELD CO.
2326 Warren Blvd., Chicago 12, Ill.

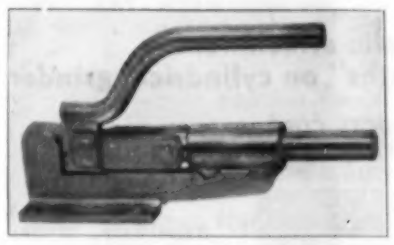
Economical

Interchangeable cartridges on this new dual purpose respirators enclose wool felt filters, for protection against dusts, and units to exclude organic vapors with inhale and exhale check valves to prevent re-breathing. Number 96 for dusts and No. 99 for vapors are the designations. Both cartridges screw into place. The respirator is secured by two head bands. Its housing is made of contoured soft rubber for leak proof fit on the wearer's face.

If you write maker identify as **IEN - 775**

CLAMP . . Toggle design to secure work in jigs and fixtures

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio



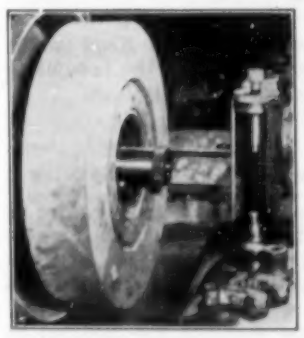
Particularly for welding

Clamping pressure is 3,000 lb. and stroke is 2 in. for the bronze plunger in this new Type P-2 Caddy toggle clamp. Construction features pins welded in place, a welded steel operating lever and a steel base. Overall dimensions, in the position shown, are about 7¾ by 2 by 4 inches. The plunger carries a ⅜-in. threaded hole.

If you write maker identify as **IEN - 776**

BALANCING . . Stud shaft arbor and puller for use on grinding wheels

Source: GORDON BRADLEY & CO.
208 Paramount Bldg., Dept. IEN, Fort Wayne 2, Ind.



No lifting

Grinding wheel, weighing to 350 lb., can be removed from the drive shaft in a grinding machine by applying the puller supplied with this new balancing arbor. The puller loosens and moves the wheel onto the adaptor roller for the balancing operation without having to lift it or remove from the machine. A wheel can be balanced in 15 to 30 min. for return to duty in the machine. The balancing equipment itself weighs 25 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 777**

PROTECTS highly polished surfaces!

MYSTIK BRAND · SELF-STIK

Protecto-Mask

Protects Stainless Steel • Aluminum • Plastics Glass • Metals and Materials of all Kinds

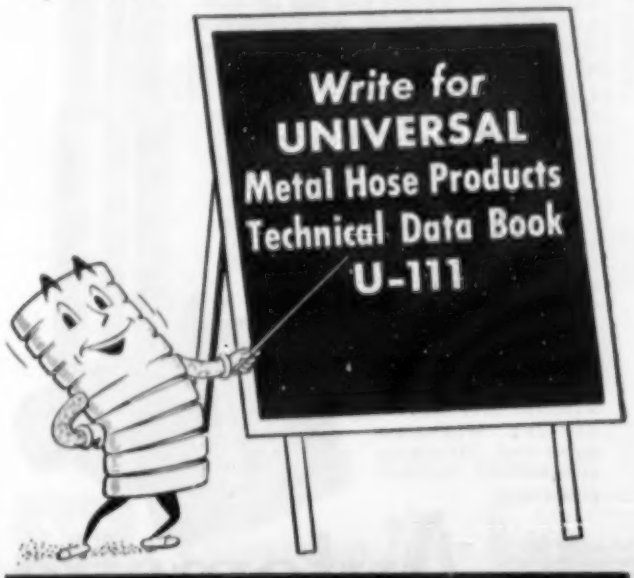
This *self-stik* "skin" applies easily from the roll—provides a tough, scratch-proof covering during all processes—fabricating, handling, shipping, storage—then peels off clean. Cuts costs, speeds production, eliminates costly refinishing and replacements. Can also be used for layout and diagramming. Write on your letterhead for information and sample. Mystik Adhesive Products, 2644 North Kildare Avenue, Chicago 39.

Trademark Mystik Registered ©1953 Mystik Adhesive Products

If you write maker identify as **IEN - 778**

QUICK DELIVERIES ON

UNIVERSAL *Flexible* METAL HOSE



UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue • Chicago 23, Illinois

If you write maker identify as **IEN - 779**

The NEW M·S·A Sulphur Dioxide Gas Detector . . .

. . . for on-the-spot testing of suspected atmospheres

This instrument, which indicates SO_2 concentrations from 0 to 50 ppm, is ideal for accurate, quick checking in areas where this toxic hazard is a threat. Three squeezes of the aspirator bulb draw in an air sample. Any SO_2 collected turns the blue granules in the detector tube to white. Length of white area is an index of the SO_2 concentrations. Maximum allowable concentration for working atmosphere is 10ppm. Safeguard your workers . . . write for details.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES COMPANY
201 North Braddock Avenue
Pittsburgh 8, Pa.

At Your Service: 82 Branch Offices in the United States and Canada

Call the M.S.A. Man on your every safety problem . . . his job is to help you

If you write maker identify as **IEN - 780**

– and now TAPER-LOCK SPROCKETS

New "off-the-shelf" availability is now brought to roller chain drives. Taper-Lock bushings are available in sizes for most needs—no more boring sprockets to fit shafts. No turning and grinding of shaft necessary—Taper-Lock grips with firmness of a shrunk-on fit. Dodge roller chain is made to highest quality standards.

Complete range of B-type steel sprockets and roller chain available from stock — ½" to 1¼" pitch. For details write for Bulletin A-624.

DODGE MFG. CORPORATION
600 Union Street, Mishawaka, Ind.

– and Dodge Roller Chain

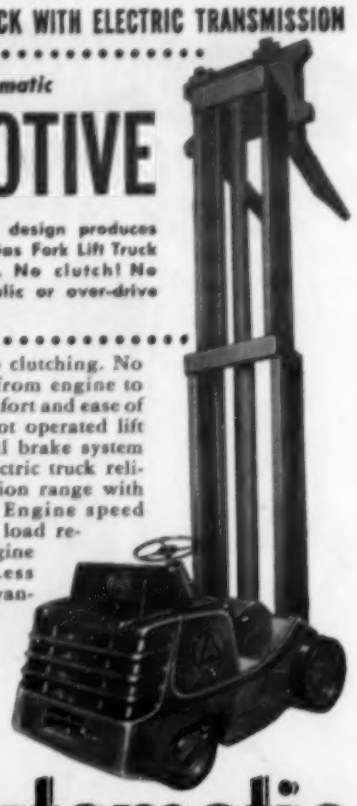
DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 781

AMERICA'S FIRST GAS TRUCK WITH ELECTRIC TRANSMISSION

The new Automatic

DYNAMOTIVE



Entirely new engineering design produces America's first and only Gas Fork Lift Truck with *Electric Transmission*. No clutch! No gears to shift! No hydraulic or over-drive mechanism.

No engine shock due to clutching. No mechanical connection from engine to drive unit. Maximum comfort and ease of operation for driver. Foot operated lift and tilt. Interlocked dual brake system for maximum safety. Electric truck reliability. Infinite acceleration range with minimum power loss. Engine speed automatically adjusts to load requirement. Minimum engine wear—maximum life! Less fuel consumption. All advantages of torque converters and overdrive without mechanical devices. Minimum down time. Maximum accessibility. No aisle projections.

For further data on the new Dynamotive Truck, write:

Automatic®

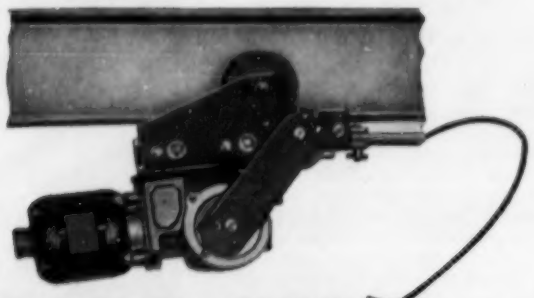
109 W. 87th St., Dept. A-4, Chicago 20, Ill.

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC DRIVEN INDUSTRIAL TRUCKS

If you write maker identify as IEN - 782

Simply Add

a *Trojan* TRACTOR



FOR POWER TRAVEL

The Trojan Tractor quickly converts slow, hand traveled hoists or small cranes and other handling units to fast, power travel; speeds up production. Simple drawbar attachment.

Ask for Trojan Tractor Bulletin 810

DETROIT HOIST & MACHINE CO.

48th year: Designers & Manufacturers Since 1905

8237 Morrow Street — Detroit 11, Mich.

If you write maker identify as IEN - 783

See 2 Warehouses Here?

Actually, you don't. The owner of this industrial office originally bought two Armco Steel Buildings for use as warehouses. Then he decided there was a greater need for an office. So he combined the material for the Armco Buildings, changed around or added windows and doors, and finished the interior the same as any other structure. Result: an attractive, efficient building.

The ease of adapting Armco Steel Buildings made this possible. And you can get these all-steel structures to meet any floor space requirement. Erection is easy, economical, fast. They are widely used for shops, offices and warehouses on permanent or temporary sites. All offer low-cost maintenance.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

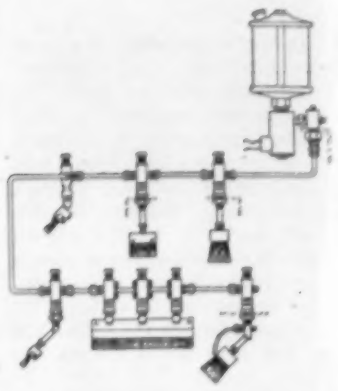
ARMCO DRAINAGE & METAL PRODUCTS, INC.

1124 Curtis Street • Middletown, Ohio

If you write maker identify as IEN - 784

LUBRICATING . . Brush type oiler for installation on conveyor chains

Source: OIL-RITE CORPORATION
2372 Waldo Blvd., Manitowoc, Wis.



Distributes oil evenly

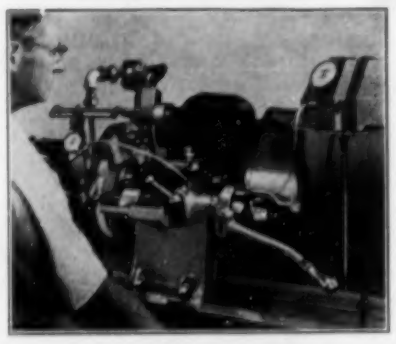
A central reservoir, controlled by a solenoid valve, delivers oil through a copper tube to one or more sight feed valves equipped with oil distributing brushes in this new oiler. Valves and brushes can be located above or facing toward the sides of one or more conveyor chains. The valves are adjusted for desired feed. The solenoid, at the reservoir, is connected so it will stand open while the chain is in motion.

The reservoir is available in capacities to 1 gallon. Certain of the brushes are fitted with multiple valves for even distribution of the oil along their length. Thus eight valves are used for a brush 18 in. in width. The solenoid is available for specified current characteristics to suit the application.

If you write maker identify as IEN - 785

GAGE . . Pneumatic attachment reads "tenths" on cylindrical grinder

Source: FEDERAL PRODUCTS CORP.
1140 Eddy St., Providence 1, R. I.



Reproducible accuracy

Arnoldair, Model A-77, is a new high magnification pneumatic gage attachment employing the company's Dimensionair gage with the Arnold grinding gage for work on a cylindrical grinding machine. The new attachment mounts on a stand at the side of the operator's position. It connects pneumatically to the indicator on the Arnold gage which maintains constant contact with the work. It reads without the "flicker", due to minute work roughness, at the hand on the Arnold dial indicator. The operator can read the pneumatic hand to produce work tolerances within 0.0001 inch.

If you write maker identify as IEN - 786

The air is kept clean and at a reasonable temperature in small spaces, such as steel mill control pulpits, by a new unit conditioner developed by Dravo Corporation, Fifth & Liberty Ave., Dept. IEN, Pittsburgh 22, Pa. The unit is available in 2 to 7½-ton capacities for ambient temperatures as high as 140 degrees F. Electric elements are included to provide heat in cold weather.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 787

If you write maker identify as IEN - 788

ELECTROPUNCH SAVES TIME

for Telechron Clocks!

ELECTROPUNCH — the all-electric impact hammer, fastens front plates to Telechron clocks 575% faster! Here's how: — the assembly, after being positioned, is simply slipped under the ELECTROPUNCH, tripping a limit switch that automatically cycles the work stroke. Total time: 1.93 seconds — as compared to the 11.10 seconds previously required for fastening with a power-driven screwdriver.

Delivers impacts up to 10,000 lbs. — up to 125 blows per minute! Economical to buy, operate and maintain — adaptable to wide range of applications. Operable from 115 V., A.C. outlets.

Write — or phone Bigelow 4-6370 — for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.

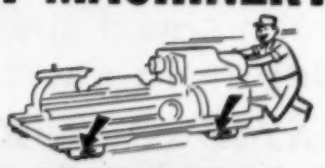
Dept. 17, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

If you write maker identify as IEN - 789

now you can

MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

. . . making 90° turns — or ANY kind of turn you desire up to 360° — giving you maneuverability into the tightest spots . . .

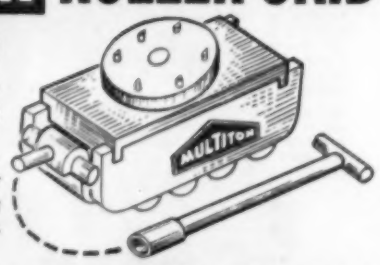
QUICKLY AND EASILY

Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW **MULTITON ROLLER SKID**

EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .

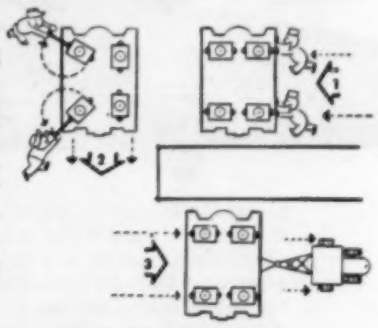
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON *CAN WORK FOR YOU!*

As in this example . . .

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.
2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.
3. If a longer movement is necessary, power is used to pull load.



Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

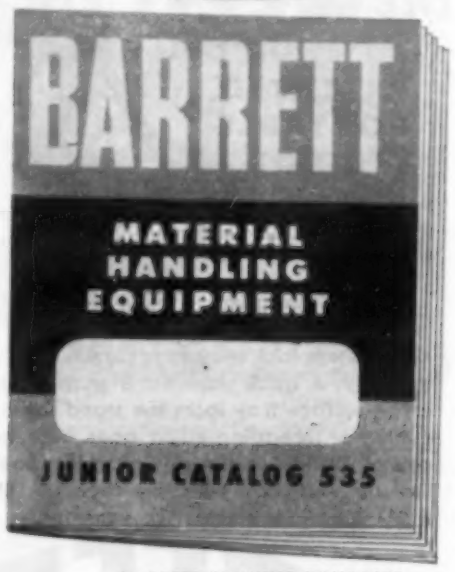
STOKVIS & EDERA & CO., INC.

95 MADISON AVE., NEW YORK 16, N. Y.
MUrray Hill 3-4935

If you write maker identify as IEN - 791

IDEAS ON MATERIALS HANDLING PROBLEMS

WRITE FOR 100-PAGE CATALOG 535



A Barrett engineer will help you select the equipment best suited to your needs —no obligation.

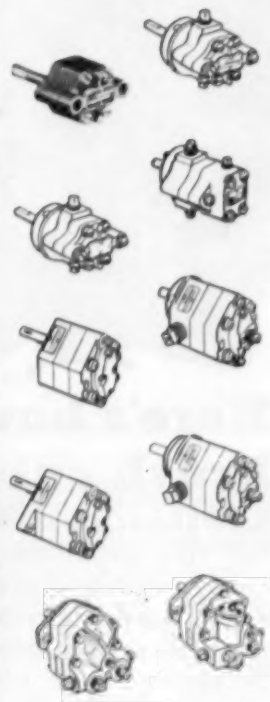
BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Ill.
Representatives in All Principal Cities
Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

BARRETT
One Man Does More Than 3 or 4 ... with a Barrett

If you write maker identify as IEN - 792

If You, too, Prefer a Built-in Hydraulic Pump...

Choose Yours from WEBSTER'S *90 types*



• The WEBSTER pump on this Joy Portable Compressor is face-mounted on the crankcase and gear-driven from the crankshaft. It is a positive displacement gear-type pump which provides force-feed lubrication.

This is but one of 90 types of WEBSTER Oil Hydraulic Pumps with capacities from 10 gph to 10 gpm—at pressures up to 1200 psi—speeds to 3600 rpm—with or without built-in relief valves. One of these models probably will suit your needs.

***Write** today for catalog which includes pump data sheets on which you can describe your requirements*

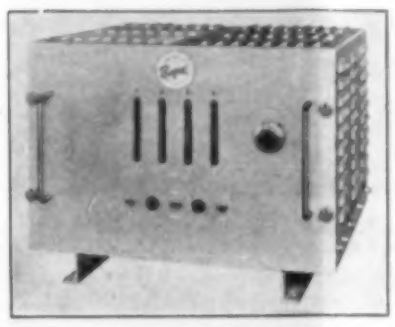
OIL HYDRAULICS DIVISION
WEBSTER ELECTRIC
RACINE, WISCONSIN
ESTABLISHED 1909
"Where Quality is a Responsibility and Fair Dealing an Obligation"

MANUFACTURERS OF A COMPLETE LINE OF OIL HYDRAULIC PUMPS

If you write maker identify as IEN - 794

GAGE . . Ultrasonic instrument reads plain or interface liquid level

Source: BOGUE ELECTRIC MFG. CO.
45 Iowa Ave., Paterson 3, N. J.



Model SL-102

A transducer, mounted in one or each of several liquid holding tanks, connects electrically to the ultrasonic indicator shown in the illustration. An ultrasonic pulse, issuing from this instrument, is delivered through the transducer. Reaction from the liquid is brought back to the instrument to provide a direct level reading in tens, units, tenths and hundredths of a foot on illuminated decimal counters.

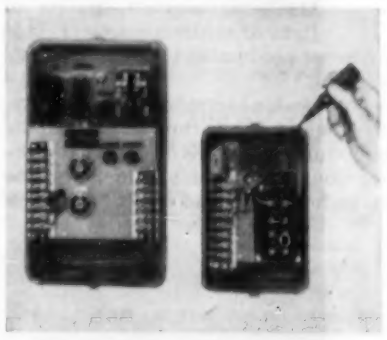
The instrument compensates for changes in velocity of sound propagation which may be caused by varying temperatures, specific gravities and differences between liquids being gaged. One instrument can provide readings for any number of transducer equipped tanks, within a radius of 2,000 ft., by employing a remote tank switching relay.

The level information can be fed to a standard digital tape printer for automatic inventory and accounting purposes. The equipment is explosion proof. It employs ac. at a level insufficient to ignite gasoline fumes under any possible open or short circuit condition.

If you write maker identify as IEN - 795

CONTROL . . Photoelectric equipment to actuate counters, drives, lights

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Bulletins GEA-5920 and 5921

The illustration shows the control mechanisms of the company's new Type N210, to the left, and K210, to the right, in its new CR7505 line of photoelectric controls. The former is capable of 600 operations per min., the latter to 450. Both are available in weather resistant, dust tight, explosion proof, or water tight enclosures. Complete equipment includes a light source and transformer, the separate phototube and its holder and the control mechanism illustrated.

The minute current, produced by the phototube when the light source shines upon its sensitive element, is amplified in the control unit to operate a magnetic relay that opens or closes the control circuit to the equipment serviced. The relay can be sealed in energized position or lock out in de-energized position. In either case it will operate once and hold, either closed or open, until an external switch or push button is operated. The relay can also be left free to operate on either light increase or decrease. Contacts rate 10 amp. on 110-volt. ac.

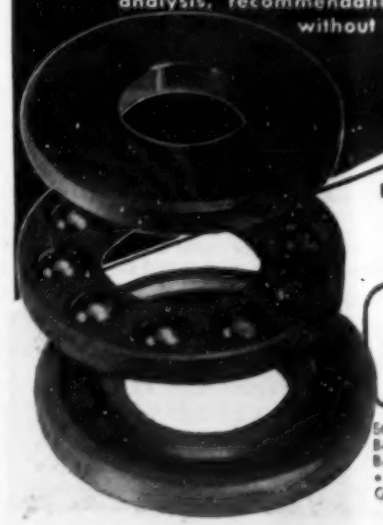
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 796

WANTED!

. . . A CHALLENGE TO SOLVE YOUR FRICTION PROBLEMS

Aetna engineers and metallurgists are working constantly with equipment builders to improve their products. They specialize in hard-to-solve friction problems and hard-to-make ball and roller bearings and precision parts. Why not challenge them to solve YOUR next friction problem? Engineering analysis, recommendations and quotations without obligation.



AETNA BALL AND ROLLER BEARING COMPANY
4600 Schubert Avenue
Chicago 39, Illinois

Aetna

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

If you write maker identify as IEN - 797

New!

AMER Jet

Reverse Jet Type Fabric Arrester

A better AAF Dry Type Dust Collector offering these basic features—high collection efficiency, constant pressure drop (constant air volume), small space requirements and continuous operation—plus:

- **Tension control to compensate for variations in fabric dimensions due to humidity changes**
- **Rugged, foolproof mechanism for dislodging collected material with high pressure jets**
- **Venturi-shaped inlet for dust-laden air extends life of cloth by reducing abrading effect**

Available for any exhaust volume. Write for Bulletin 279.

AAF American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 798

Aeroquip

The First Butane-Propane Hose Listed by Underwriters' Laboratories

THIS IMPORTANT LABEL TELLS THE STORY!

Cut costs by making your own butane-propane hose lines with Aeroquip Hose and Fittings, MATCHED for guaranteed performance. U.L. listed Aeroquip 1533-type hose is recommended for use on engines and other "fixed" installations. It is exceptionally light, flexible, and strong. A braided wire reinforcing layer within the hose provides hundreds of points of contact with the hose fittings, thus assuring safe conductivity of static electricity.

AEROQUIP CORPORATION, JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

If you write maker identify as IEN - 799

Completely *New!!* **. . the Profilometer**

TYPE QA AMPLIMETER

For NEW Speed and Convenience in Measuring Surface Roughness

★ Gives *R.M.S.* or *ARITHMETICAL* average roughness readings, in microinches, selected at will.

★ Built *FOR SHOP USE.* Rugged; portable; compact. Has 30-second warmup. No calibration by operator.

★ Used with *ALL* Profilometer equipment, old or new — for measuring practically *ALL* surfaces.

★ Has many other *NEW* advantages — plus all the features that have made the Profilometer a standard *shop tool* in thousands of plants . . . since 1936.

FREE BULLETIN LT86 gives details. Write!

Profilometer is a registered trade name.

MMC MICROMETRICAL MANUFACTURING COMPANY
345 S. MAIN ST. • ANN ARBOR 1, MICH.

If you write maker identify as IEN - 800

THE "LOW DOWN" ON

LOW-COST HANDLING

FREE!
SEND FOR YOUR COPY TODAY!

GET THIS IMPORTANT FORK LIFT DATA NOW!

Here's the story of the amazing, new BUDA Fork Lift Truck! It out-maneuvers, out-lasts any other truck! It does the biggest jobs fastest! Strip it for maintenance in 22 seconds; disassemble in 22 minutes; change clutch in 30 minutes! See how and why in new 36-page booklet. Write to:

The Buda Company
Harvey, Illinois

BUDA

Division of Allis-Chalmers Manufacturing Company

If you write maker identify as IEN - 801

A WIDE RANGE INDICATING CONTROL

TYPE E8N

The type E8N indicating control is ideal for installations where an exact temperature reading must be readily available at all times. It is a broad range, precision-built unit that shows the exact temperature of the thermal bulb at all times. The E8N is compensated accurately for wide ambient temperature changes, is simple in design and contains no delicate mechanisms. Various models are available covering ranges of 300° F to 600° F between limits of -150° F to 600° F. On-off differentials available as low as .25° F. Complete details and electrical specifications are contained in bulletin #4-1, write for it today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 802

NEOPRENE PROTECTION APPLIED LIKE PAINT!

coatings and linings against corrosive fumes or immersion by roller, brush or spray

Gaco LIQUID NEOPRENE PROTECTIVE COATINGS

N-700	N-200-1
General Maintenance Coating for protection against corrosive fumes and splash. Air Curing—No Heat.	Heavy Duty Lining for tanks and equipment—for constant contact and immersion. Heat Curing.

Send me the facts about this genuine Neoprene Corrosion Protection that goes on like paint at **LOWER APPLIED COST and OUTLASTS ALL OTHER COATINGS.**

Name.....
Company.....
Address.....

Send this coupon to
GATES ENGINEERING COMPANY
P. O. BOX 1711, WILMINGTON, DEL.

If you write maker identify as IEN - 803

ISOLATING . . Vibration insulators to match equipment housing outlines

Source: BARRY CORPORATION
838 Pleasant St., Watertown 72, Mass.

Built to fit your equipment

Unit Barrymount trade names a new assembly of the company's vibration insulators, previously described IEN-5371-53, and a pair of steel strip members to apply beneath the housing and the driving units in equipment such as large fans and compressors. Each assembly is built to meet the vibration characteristics of a given unit of equipment and to conform with the equipment outline. The company has prepared literature describing the new design.

If you write maker identify as IEN - 804

PAINTING . . Light weight spray gun designed to fit a woman worker's hand

Source: BINKS MFG. CO.
3122 Carroll Ave., Chicago 12, Ill.

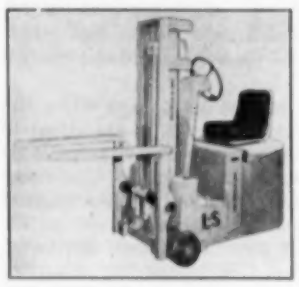
About $27

Weight is 15 oz. for this new Model-26 aluminum body paint spray gun. It has been developed particularly for use by women workers. It employs the same nozzle design as that on heavy duty production guns. It can be used to spray lacquers, synthetic enamels, paints of light or medium viscosity. It is recommended for intermittent or production touch-up painting and for stenciling and blending.

Construction includes a replaceable cartridge type air valve, a brass fluid passage, air inlet at the bottom of the handle and large air passages to minimize pressure drop between the air inlet and the nozzle. Complete assembly includes one nozzle set-up. Accessories, such as cups and hoses, are available on special order.

If you write maker identify as IEN - 805

Inverting the forks on a Model-J Spacemaster truck enables the truck to stack to an additional 30 in. in height, for a total lift to 132 in., without increasing collapsed height of the uprights beyond the standard 71 inches. The change can be made in a minute or so from the usual fork position so the truck can be used interchangeably. Lewis-Shepard, 125 Walnut St., Dept. IEN, Watertown 72, Mass. is the truck manufacturer.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 806

TWO SIMPLE REASONS WHY!

1+1+1+1=4

9\54

● We will guarantee—in writing—that you'll save money on your blast cleaning costs when you use Permabrasive* shot and grit instead of conventional annealed abrasives. Yes sir, a guaranteed savings in writing.

We can afford to make this statement, because Permabrasive shot and grit are better. They are better for two simple reasons: (1) Permabrasive is made from metal of the proper analysis. Its carefully controlled chemical composition insures uniform response to heat treatment and maximum resistance to breakage. (2) Permabrasive is heat treated properly. A continuous processing method insures complete heat treatment of each abrasive particle, resulting in a high degree of uniformity and assuring maximum abrasive durability.

Permabrasive will save you money and we can prove it. Write the nearest Hickman, Williams office for proof and a complimentary copy of "A Primer on the use of shot and grit."

*Licensed under U. S. Patent No. 2184926, U. S. Application No. 619602

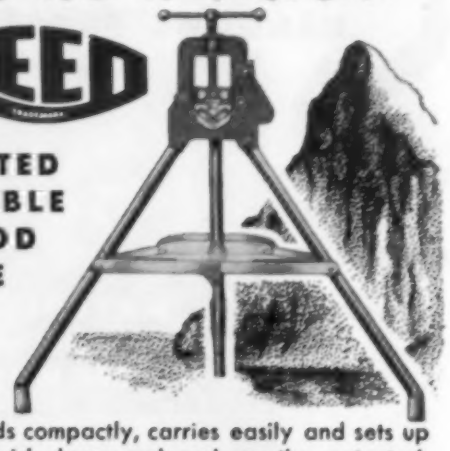
PERMABRASIVE* SHOT AND GRIT IS PRODUCED EXCLUSIVELY BY THE NATIONAL METAL ABRASIVE CO. • Cleveland, Ohio
AND SOLD EXCLUSIVELY BY
HICKMAN, WILLIAMS & CO. (INCORPORATED)
CHICAGO • DETROIT • CINCINNATI • ST. LOUIS • NEW YORK
CLEVELAND • PHILADELPHIA • PITTSBURGH • INDIANAPOLIS

If you write maker identify as IEN - 807

Solid as a Rock!

the REED TRADEMARK

PATENTED PORTABLE TRIPOD VISE



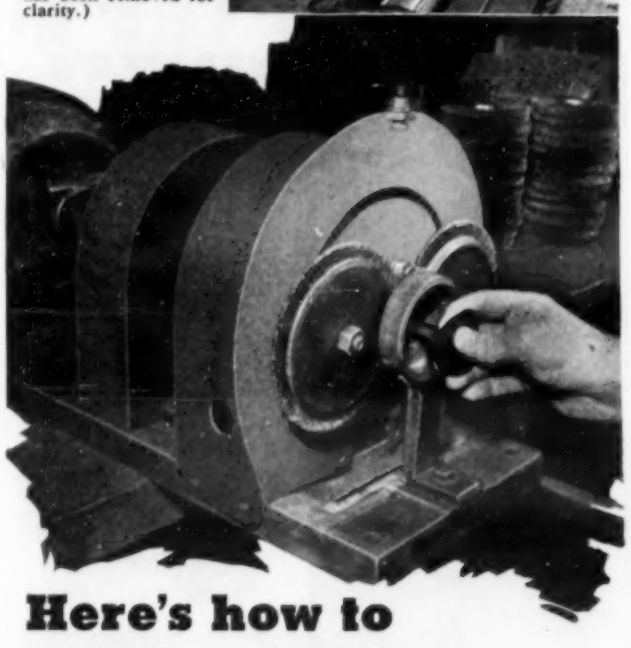
One unit. Folds compactly, carries easily and sets up instantly. A quick downward push on the patented, large-surface tray locks the stand solidly so that all cutting or threading effort goes into the work. Legs cannot buckle under any working conditions. They line up vertically with the face of the well-known REED long-jaw vise. *Ask your jobber or write . . .*

REED TRADEMARK
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

If you write maker identify as IEN - 808

The rubber base of each valve is roughened by a Pittsburgh brush to secure a better bond when vulcanizing the valve to a tube.

Pittsburgh brushes remove excess rubber which spills onto valve cap thread during vulcanizing operation. (Guard housing has been removed for clarity.)



Here's how to brush rubber

A. Schrader's Son, Brooklyn, New York, uses Pittsburgh brushes in the production of tire valves for leading tire manufacturers. In one operation, two brushes remove the excess rubber which flows around the valve threads during the vulcanizing process—750 valves per hour are cleaned in this manner!

Another Pittsburgh brush on a buffing machine roughens the rubber base of the valves to secure a better bond when vulcanizing the valve to a tube. In this operation, the Pittsburgh brush was chosen because it outlasts competitive makes.

WRITE TODAY for your free copy of our new booklet that shows thru actual case histories, how Pittsburgh can help cut *your* brushing costs. Address: Pittsburgh Plate Glass Company, *Brush Div.*, Dept. W-16, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH *Power Driven* BRUSHES

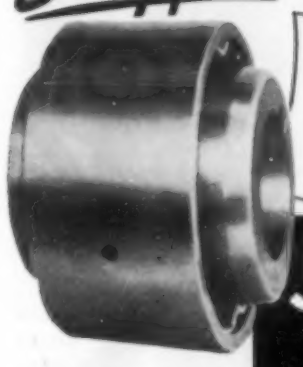
BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

If you write maker identify as IEN-810

Stripped for SAVINGS!



No nuts
No bolts
No flanges

Sier-Bath
FLEXIBLE
GEAR COUPLINGS

Save space, weight
Cut assembly costs
Slash down-time
Reduce equipment wear
Save power, labor

Compare! Only 7 parts... 3/5 usual size, 1/2 usual weight. .lower moments of inertia. .can be run at higher speeds... put less strain on shafts, bearings, armatures... eliminate corrosion problems. NEW 16-page CATALOG on request. *Sier-Bath Gear & Pump Co., Inc., 9246 Hudson Boulevard, North Bergen, N. J.*

Call Your Sier-Bath Distributor or Representative

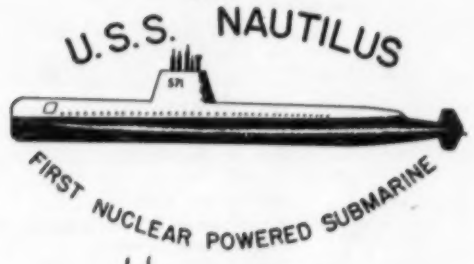
Founded 1905 Member A.G.M.A.
Also Manufacturers of Precision Gears and Rotary Pumps

If you write maker identify as IEN-811

.....another Shawmut first

Amp-traps*

For U.S.S. NAUTILUS



FIRST NUCLEAR POWERED SUBMARINE

...How about letting Amp-traps stop dangerous short circuits for you?

In Canada—Powerlite Devices, LTD.

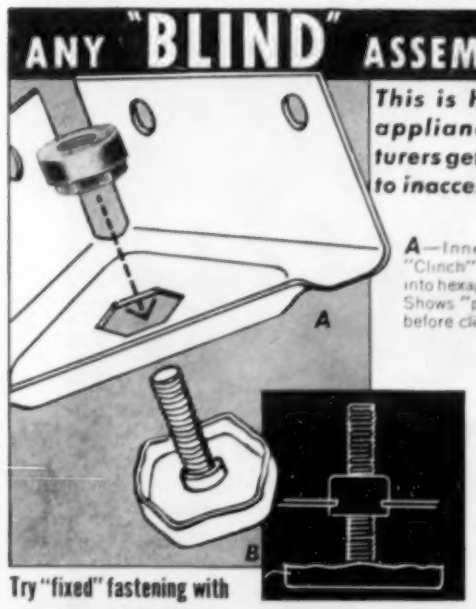
©The Chase-Shawmut Co. 1953 *Trade Mark

THE CHASE-SHAWMUT CO.
386 Merrimac St. Newburyport, Massachusetts

If you write maker identify as IEN-812

ANY "BLIND" ASSEMBLIES?

This is how leading appliance manufacturers get fasteners into inaccessible places.



A—Inner View GRIPCO "Clinch" Nut ready to insert into hexagonal hole in metal. Shows "pilot" and hex hole before clinching.

B—Cross-Section view after pilot has been clinched and bolt inserted. Can be locked at any point. (Non-locking nut can be supplied if preferred)

Try "fixed" fastening with

GRIPCO "CLINCH" NUTS

Do you have any application on which fastening must be made from a hard-to-get-at point; or do you need additional threading depth for applying bolts to thin metals? Investigate this method of firmly affixing GRIPCO "Clinch" Nut to the work so it is already in position when bolt is applied.

375

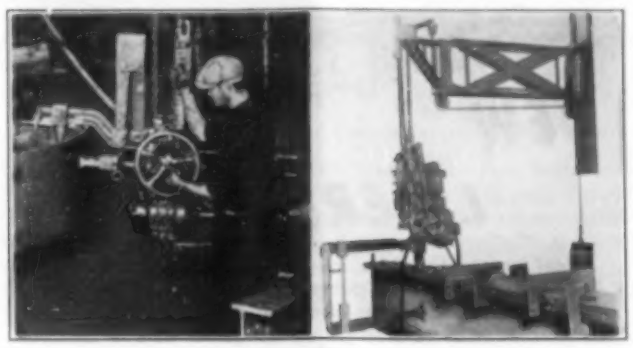
GRIP NUT COMPANY
310-S S. Michigan Ave., Chicago 4, Ill.

Write for samples, stating types and sizes of nuts used.

If you write maker identify as IEN-813

DRILLING . . Universal machine suspends from overhead, rates to 2 in.

Source: ARTOS ENGINEERING CO.
2757 S. 28th St., Dept. IEN, Milwaukee 46, Wis.



For work that is difficult to move

Girder Drill designates a new machine for suspension from overhead by a crane or a hoist mounted on a radial arm. The machine itself is cradle supported so it can be set vertically, horizontally or at any angle in between. It is equipped with a work clamp that surrounds the drill point on one side and backs up the work on the other.

Standard equipment includes the head assembly, two detachable clamps for vertical or horizontal drilling and a set of change gears for the speeds and feeds. Speed range is 175 to 500 rpm. Feeds are from 0.005 to 0.020 in. per revolution.

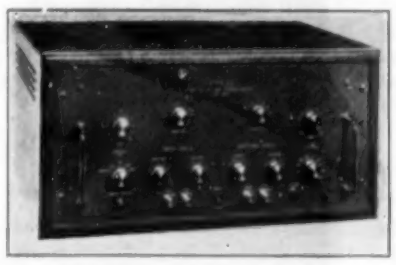
The operator brings the machine into approximate position, advancing the drill by turning a hand wheel. Then he presses a control button. The machine takes over from this point to feed the drill through the work, stop and reverse it, when the hole is completed, so the spindle returns to starting position and the clamp releases ready for movement to the next drilling location.

Clamping and return action is by pneumatic pressure. The clamp acts to bring the machine around square with the work so a true hole is assured. Drive is by a 5-hp. ac. ball bearing motor. Maximum work thickness is 6 inches. Air pressure required is 80 to 90 pounds.

If you write maker identify as IEN-814

TESTING . . Electronic instrument generates pulses for laboratory test

Source: BERKELEY SCIENTIFIC
2202 Wright Ave., Dept. IEN, Richmond, Calif.



Checks equipment

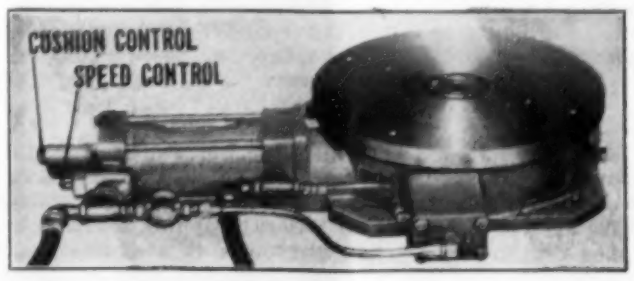
Model-4904 Double Pulse generator provides a source of single or paired pulses for laboratory testing of electronic pulse circuits such as counters, gates, switches, amplifiers. The instrument consists of two basic pulse forming circuits which are triggered at a variable repetition rate by either an internal or external frequency source or by a manually operated switch.

A time delay circuit provides variable separation between the first and second output pulses. Output of each pulse forming circuit is obtained from a power amplifier. Pulse spacing is variable by means of coarse and fine controls. Repetition rate is internally controlled, also by coarse and fine adjustments, between 1 and 10,000 pulses per second. Single cycles can be initiated with a push button. List price is $540.

If you write maker identify as IEN-815

INDEXING . . Rotary table, air operated, 4 to 30 station stops

Source: AIR-HYDRAULICS INCORPORATED
218 Belden Road, Dept. IEN, Jackson, Mich.



Ready for tooling

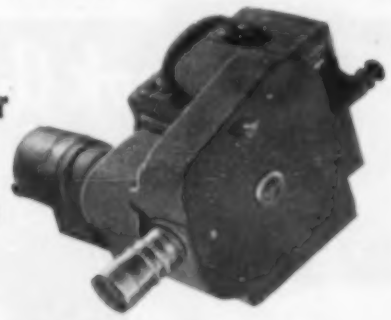
Model 1405 is a new 15-in. air-operated table to supplement the smaller 10-in. assembly previously described IEN-0868-51. It has the same basic indexing mechanism as the smaller unit with the addition of adjustments for speed and for cushioning action under varying load conditions. Index action can be sustained at 100 per min., with an 8-station stop ring, when carrying a 200-lb. load measuring 22 in. in diameter.

The table can be mounted in horizontal or vertical position and specified with a 4, 6, 8 or 12-station ring in standard construction. Other rings, to a maximum of 30 stops, can be supplied. Operation is on 60 to 175-lb. line pressure for the 3½-in. air cylinder.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-816

Here's a trouble shooter for action too fast to see



A Kodak High Speed Camera lets you see what's going on by slowing action down to a walk. It takes up to 3200 pictures a second on 16mm film. An oscillograph trace can be superimposed on the same film. When the film is projected at normal speed, action appears slowed as much as 200 times.

If you have a product design or performance problem involving high-speed mechanical action or fluid flow, a Kodak High Speed Camera may well provide the answer. It is easy to operate and has the right speed range for most industrial applications. To find out how others have used this versatile instrument, write for a copy of the booklet, "High Speed Motion Pictures in Industry."

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak HIGH SPEED Camera

Kodak

If you write maker identify as IEN-817

NEW NYB&P CONVEYOR BELT HAS BUILT-IN RIP STOPPERS

"RESISTORIP" construction ejects sharp, partly-embedded objects that ruin belts

How often have you had to junk an almost new conveyor belt...ripped to shreds by razor-sharp particles which embed themselves in the belt, then jam and slit long sections?

NYB&P's new "RESISTORIP" belt is designed to end this useless loss. At close intervals throughout its length, transverse groups of high-tensile steel wires are built into the belt's carcass. When a sharp, partly-embedded object starts to rip this belt, it quickly encounters one of these wire groups. Immediately it is ejected...and damage to the belt is confined to a very short section, only inches in length!

SEE YOUR NYB&P DISTRIBUTOR

NYB&P NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N. J.
America's Oldest Manufacturer of Industrial Rubber Products

If you write maker identify as IEN-818

Here's HAND TRUCK News!

GUARANTEE

If this AMERICAN HAND TRUCK fails in service for any reason (normal wear on rubber tread wheels or corrosive attack excluded)—within five years from date of delivery—return it freight prepaid for repair or replacement to
THE AMERICAN PULLEY COMPANY
4200 Wissahickon Ave., Philadelphia 29, Pa.
SAVE THIS CARD—IT'S YOUR GUARANTEE

AMERICAN HAND TRUCK HEADQUARTERS
EFFICIENT MATERIALS HANDLING AT LOWEST COST

ONLY AMERICAN GIVES YOU THIS GUARANTEE

Clip and Mail Coupon For Bulletin

Materials Handling by

AMERICAN PULLEY COMPANY

Complete line of Pressed-Steel Hand Trucks, Barrel Cradles, and Stamped Industrial Wheels.

The American Pulley Company
4240 Wissahickon Ave., Philadelphia 29, Pa.
Gentlemen:
Please send me your latest bulletin on American Hand Trucks.
Name_____
Firm Name_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 819

Data Book Available!

WASHERS and METAL STAMPINGS

Write today for your free copy of this booklet that contains useful information on:
TENSION WASHERS • WIRE TERMINALS • GENERAL STAMPINGS • FRICTION WASHERS • BLANKING DIES • PROGRESSIVE AND FINISHING WASHERS • DISHED BLANKS • COMPOUND DIES • STANDARD GAUGES

Quadriga has a press capacity up to 150 tons, depth of draw to 4 in.—also, new production line facilities for job work and parts assembly service. It may pay you well, in terms of lower assembly costs, to ask about this service. When you request our booklet—ask about this, too.

THE QUADRIGA MANUFACTURING CO.

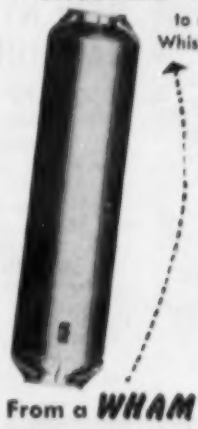
215A W. GRAND AVE., CHICAGO 10, ILL.

If you write maker identify as IEN - 820

STOP THAT NOISE!

from Air, Steam and other gas discharges

with **BURGESS-MANNING SNUBBERS**



Stop that noise and profit through better neighbor and employee relations. Avoid compensation claims.

Burgess-Manning Snubbers are engineered to effectively correct your specific noise problem. There is no obligation for recommendations. Send us a description of your problem.

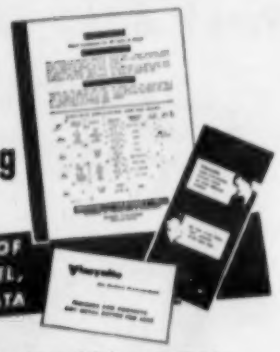
From a *WHAM*

BURGESS-MANNING COMPANY

743 East Park Avenue, Libertyville, Illinois

If you write maker identify as IEN - 821

Get this *new* FREE kit on Metal-Finishing ... Maintenance



INCLUDES ACTUAL SAMPLE OF VINSYNITE ON STEEL PANEL, PLUS APPLICATION AND USE DATA

Vinsynite is a metal pretreatment which greatly increases adherance of top finishes, resists rust and corrosion. It can be applied to *any* metal by simple brush, spray, dip or roller methods, needs no special equipment or chemical control. If you finish metal products or maintain metal structures, you should have this information.

SEND THE COUPON

SPECIALTY COATINGS, INC., Division of Thompson and Company
1000 Allegheny Ave., Oakmont, Pa.

Send us the new information kit about Vinsynite.
NAME_____
POSITION_____
COMPANY_____
ADDRESS_____

Vinsynite
COMBINES PROTECTION AND ECONOMY

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

If you write maker identify as IEN - 01

ADHESIVES . . Materials for use in aircraft construction are summarized in three-page chart which forms part of new 14-page Bulletin Z-APM. Also included are strippable and other coatings, sealers. Minnesota Mining & Mfg. Co., 423 Piquette Ave., Dept. IEN, Detroit 2, Mich.

If you write maker identify as IEN - 02

STEEL BALLS . . Made in chrome alloy and stainless steel by cold upset or hot forging in sizes from 5/32 to 2¼ inches. Tolerances and packaging in 4-page catalog. Coolidge Corp., Dept. IEN, Middletown, Ohio

If you write maker identify as IEN - 03

METAL BELLOWS . . They compensate for dimensional change or linear movement due to temperature change or vibration. Sizes, pressure and deflection ratings are given in 6-page Bulletin 300. Titeflex Inc., 500 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 04

BENDING . . 116-page Die Manual shows drawings of some 200 sets of press brake dies together with punching attachments and a line of machines. Examples are rubber aircraft dies and heated dies for magnesium. Verson Allsteel Press Co., 9325 S. Kenwood Ave., Chicago 19, Ill.

If you write maker identify as IEN - 05

BOILERS . . Questions and answers on steam generator from 18 to 500 hp. stress travel of fuel and combustion air in a revolving spiral vortex that travels the length of the furnace. "All Your Questions," 4 pages. Cyclotherm Div., U. S. Radiator Corp., 161-5 E. First St., Oswego, N. Y.

If you write maker identify as IEN - 06

BUILDINGS . . Asbestos-cement building board is strong, flexible, non-combustible, weatherproof. It handles and works like wood. Application suggestions in 12-page "Flexboard." Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 07

BUILDINGS . . Skylights, side walls, sash lights are application points for the company's translucent Fiberglas-reinforced plastic sheet. It is shatterproof. Bulletin 539, 4 pages. Resolite Corp., Route 19, Dept. IEN, Zelienople, Pa.

If you write maker identify as IEN - 08

CALCULATING . . Electronic machine does complicated calculations from punched cards at rates to 9,000 cards per hour. Bulletin TM-842, 8 pages, tells what it can do in engineering, payroll, billing computations. Remington Rand Inc., 315 Fourth Ave., Dept. IEN, New York 10, N. Y.

If you write maker identify as IEN - 09

CARBON . . Finely-divided material with ash content of .1 per cent can be used as a carbon raiser, heat producer, reducing agent. It is available in quantity. Informal description in 16-page "The P. A. . . ." Portland Gas & Coke Co., 1053 Public Service Bldg., Portland 4, Ore.

If you write maker identify as IEN - 010

CHUCKS . . Quick-change drill chuck has an adapter so a drill can be changed with the machine running. A tap chuck has an overload safety release. Both in 4-page bulletin, "May Chucks." Kurt Orban Co., 204 E. 43rd St., New York 17, N. Y.

If you write maker identify as IEN - 011

CLEANING MATERIALS . . Products for metal working industry use include cleaning, phosphating, masking, stripping, rustproofing, flaw-detecting materials. 16-page Bulletin A-33B gives application data. Turco Products, Inc., 6135 S. Central Ave., Dept. IEN, Los Angeles 1, Calif.

If you write maker identify as IEN - 012

COMMUNICATING . . Mobile radio-telephone equipment to use on plant power trucks or highway vehicles. Four data sheets, ECR-86, 113, 114, 115, are on mobile units. Six sheets, ECR-80, 81, 92, 93, 110, 111, on station units. General Electric Co., 1949 Electronics Park, Syracuse 1, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 822

You don't need to bolt machines down!

Put them on Vibra-Mount Felt and SAVE YOUR FLOORS*

In most cases machines placed on Vibra-Mount Felt do not need to be bolted down. The strong Vibra-Mount adhesive between felt and floor and felt and machine holds firmly, preventing "walking." This method of mounting is simple, fast, and inexpensive. And there is a great big plus value in reduction of vibration, as much as 85%! Save your floors, lessen machine down-time, stop shaking employees and machines. When installing new machines or relocating your present equipment, use Vibra-Mount Felt. Simple details and further information will be found in the booklet "How to Reduce Vibration." Write for it on your company letterhead.

*T.M. Reg

American Felt Company
TRADE MARK
GENERAL OFFICES: 18 GLENVILLE ROAD, GLENVILLE, CONN.

If you write maker identify as IEN - 823

HERE'S THE NEWEST

100,000 R.P.M. NU-JETT PENCIL GRINDER

Greater Power — New Safety Guard
Automatic Lubrication. Weighs 5 oz.
One Moving Part.

Shown Actual Size 1/8" Chuck.

NU-JETT DOES ANY FINE PRECISION GRINDING, POLISHING, FINISHING. Use it for Etching, Deburring, Die Work, Carving on Wood, Metal, Rubber and Plastic.

Air driven on 50 lbs. pressure or more, very smooth in operation, compact, it truly handles like a pencil.

New Low Cost Package **$42.50**

Here is an outstanding value that includes NU-JETT GRINDER, our new Air Filter, Automatic Lubricator, Hose and Chuck Wrench.

NU-JETT PRODUCTS

1330 Michigan St., N. E.
Phone 9-8831 GRAND RAPIDS, MICH.

If you write maker identify as IEN - 824

NOW YOU CAN MAKE YOUR OWN NYLON REPAIR PARTS

fabricated from **POLYPENCO® nylon shapes**

Immediate delivery of POLYPENCO nylon rod, tubing, strip and slab. We'll help you fabricate.

- Make one part or hundreds economically on standard metalworking tools
- Reduce wear on gears, bearings, gaskets, cam followers, etc.
- Eliminate lubrication
- Eliminate corrosion on exposed surfaces
- Eliminate backlash and noise
- Get top performance in every part with quality-controlled Polypenco nylon shapes

POLYPENCO NYLON WRITE FOR GENERAL BULLETIN

nylon and Teflon*—other non-metallic/stock shapes
finished parts also available to your specifications
The POLYMER CORPORATION of Penna. • Reading, Penna.
*trademark for Du Pont tetrafluoroethylene resin

If you write maker identify as IEN - 825

NEW

DWYER FLEX-TUBE 1-V GAGE

Extremely Versatile — serves as air filter gage, static pressure indicator, draft gage, air velocity meter, etc.

Check these points:—

- Low range accuracy .01" water
- Ranges 0-3" and 0-7" water
- Attractive, rugged molded plastic housing
- Plus, minus or differential readings
- Plunger type oil level adjuster
- Furnished complete — tubing and fittings
- Direct-reading velocity models available
- Low priced

Ask for Bulletin 206

DWYER *Specialized* INSTRUMENTS and GAGES

F. W. DWYER MFG. CO. • 307 SO. WESTERN AVE. • CHICAGO 12, ILLINOIS

If you write maker identify as IEN - 826

Well Stacked!

EQUIPMENT MFG. INC.

21564 Hoover Road • Detroit 5, Michigan

NEW LITERATURE—Continued

If you write maker identify as IEN - 013

ELECTRIC CONNECTORS . . Hermetic terminals in glass-to-steel feed-through design. Fourteen electrode designs, soldering suggestions, catalog information data on ten groups and combinations, all in new 20-page bulletin. Fusite Corp., 6002 Fernview Ave., Dept. IEN, Cincinnati 13, Ohio

If you write maker identify as IEN - 014

ELECTRIC CONNECTORS . . Single-wire unit locks into place in a quick-detachable arrangement. It is supplied in plug form, as a panel jack, terminal strip, locking test prod. Catalog 2, 26 pages. Harvey Hubbell Inc., State St. & Bostwick Ave., Dept. IEN, Bridgeport 2, Conn.

If you write maker identify as IEN - 015

ELECTRIC CONNECTORS . . Design suggestions on cord sets made to your specifications are given in 12-page Bulletin CS-1 along with drawings and descriptions of male plugs, female connectors, strain reliefs as standard components. Whitney Blake Co., Dept. IEN, New Haven 14, Conn.

If you write maker identify as IEN - 016

PRESSURE CONTROLS . . Sensitive pickup element has a Bourdon tube that actuates a potentiometer to convert pressure from 100 to 5,000 lb. into an ac. or dc. signal. Ranges and ratings in 4-page Bulletin 3553. Bourns Laboratories, 6135 Magnolia Ave., Dept. IEN, Riverside, Calif.

If you write maker identify as IEN - 017

PROCESS CONTROLS . . Instrument panel boards, test equipment, other specialized industrial equipment is built to specification. A representative few are illustrated in 4-page "Test Equipment" folder. Industrial Engineering Corp., 2720 Vine St., Dept. IEN, Cincinnati 19, Ohio

If you write maker identify as IEN - 018

TEMPERATURE CONTROLS . . 48-page Bulletin P-1260 on controls for furnaces, ovens, dryers, kilns includes pyrometers, thermometers, relays, operators, control valves. It tells how to order a control assembly, gives list prices. Bristol Co., 107 Bristol Road, Waterbury 20, Conn.

If you write maker identify as IEN - 019

CORROSION PROOFING . . Resin-base materials find a variety of applications in industry from coatings for toothpaste tubes to those for ship propellers. Picture review on possibilities in 8-page Folder VG. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 020

CORROSION PROOFING . . Rubber linings and coatings are suggested for corrosion and abrasion resistance on metal products by 16-page bulletin. A two-page service chart covers preparations, application, cure. Goodall Rubber Co., 486 Whitehead Road, Dept. IEN, Trenton 4, N. J.

If you write maker identify as IEN - 021

SHAFT COUPLINGS . . Two selection tables are given in 8-page Condensed Catalog on flexible shaft couplings. One is for standard service, the other for fluctuating-pulsating use. Sizes are to 810 hp. at 100 rpm. Variable-speed pulleys, transmissions also. Lovejoy Flexible Coupling Co., 4814 W. Lake St., Dept. IEN, Chicago 44, Ill.

If you write maker identify as IEN - 022

CRANES . . Overhead electric cranes in 3 to 300-ton models are given a detailed description on construction points in 28-page Bulletin C-6-3. Harnischfeger Corp., 4400 W. National Ave., Dept. IEN, Milwaukee 46, Wis.

If you write maker identify as IEN - 023

CUTTING TOOLS . . Carbide-tipped tool bits, twist drills, core drills, masonry drills, glass drills, reamers, lathe centers, countersinks. Catalog 186, 24 pages. Chicago-Latrobe, 411 W. Ontario St., Dept. IEN, Chicago 10, Ill.

If you write maker identify as IEN - 024

DRIVE BELT . . V-belt is made of links of rubber-fabric material that assemble by integral studs. It is supplied by the yard, is detached to the desired length, can be shortened or lengthened. Data Book B-220, 12 pages. Brammer Corp., 684 Broadway, Dept. IEN, New York 12, N. Y.

If you write maker identify as IEN - 025

DRIVE CHAIN . . Roller chain in standard and extended-pitch designs, also sprockets in standard, quick-detachable and special types. Price Sheet CD-101-B, 12 pages. Browning Mfg. Co., 16 Chester St., Dept. IEN, Maysville, Ky.

If you write maker identify as IEN - 026

ELECTRIC DUCT . . Square metal wireway and fittings, flanged and flangeless. Catalog information, installation diagram, fill table in 36-page bulletin Keystone Mfg. Co., 23326 Sherwood Ave., Dept. IEN, Center Line, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 828

Fielden

RESISTANCE THERMOMETER RECORDER

- *Ideal for measurement of temperatures up to 600°F.*
- *Inherent accuracy ± 0.5% of Full Scale*
- *Linear scale on all spans up to 600°F.*
- *Recorder has interchangeable measuring unit which permits change in range or measurement without rewiring. Up to 4 simultaneous inputs permit addition, subtraction or averaging.*

This new, low-cost Fielden self-balancing type recorder uses an AC actuated bridge circuit that eliminates direct current source and replacement of dry cells. Measures spans of 50°F. or less if required. Full scale pen travel in 3.5 sec. Sensitivity ±0.5% of full scale, dead spot 0.1% of full scale. Recorder adaptable to many uses. Write today for detailed information to Dept. E.

Fielden INSTRUMENT DIVISION

ROBERTSHAW-FULTON CONTROLS COMPANY

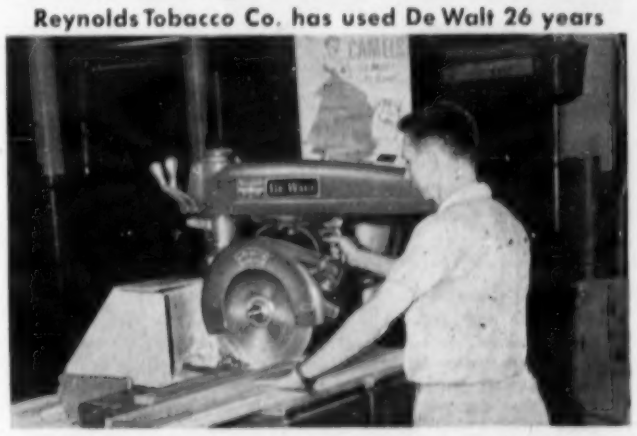
2920 N. 4th St., Philadelphia 33, Pa.

Dollar for Dollar—Your Best Instrument Value

If you write maker identify as IEN - 829

All-Purpose AMF De Walt is best for plant maintenance!

Reynolds Tobacco Co. has used De Walt 26 years



You'll find *one* low-cost AMF DeWalt® will meet *all* your plant maintenance needs—and that includes all types of construction work and boxing and crating.

Just one DeWalt turns out pallets, conveyor bucks, crating, book shelves, ladders and many other products. It's amazingly versatile—cross-cuts, miters, bevels, rips, dadoes, shapes and many others! Tops in speed, accuracy and safety, too.

Send for catalog to DeWalt Inc., Dept. IEN-54-1, Lancaster, Pa.

DeWalt Inc. Lancaster, Pa.

DEWALT POWER SAWS

In Canada: DeWalt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 830

Drill More Holes Per Hour In ANY Pattern . . . On ANY Drill Press

with a *Adjustable* MULTI-DRILL

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% . . . save time, cut costs. MULTI-DRILLS make *any* drill press produce *more*. Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

DRILLS ANY HOLE PATTERN

See your Commander Distributor for complete details. Write for the NEW Commander Full Line Catalog No. 851.

COMMANDER MFG. CO.

4219 W. Kinzie St. • Chicago 24, Illinois

Product of *Commander* . . . Builder of Production Tools

If you write maker identify as IEN - 831

AA-867

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachine Commander High Speed Slitter Rewinder

Camachines

If you write maker identify as IEN - 832

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

If you write maker identify as IEN - 833

Shelf Adjustment is 60% faster with Equipto Iron-Grip® Steel Shelving

Iron-Grip Steel Shelving permits instant adjustment of shelves on 1½" centers—entirely from front—without moving the unit. This enables user to quickly and easily adapt the shelving to changing storage needs. Each shelving unit is complete in itself . . . may be moved without disturbing remainder of assembly.

Equipto Iron-Grip Shelving is immediately available from stock in all sizes, either open or closed, with or without dividers, bin fronts, drawers, or label holders. See your Equipto distributor or write for free catalog.

Exclusive Stud eliminates nuts, bolts and tools

A slope in the keyhole joins with the taper on the stud to form the tightest and strongest of grips. An exclusive Equipto feature.

® Patent Pending

Equipto AURORA, ILLINOIS
Division of Aurora Equipment Co.
655 Prairie Avenue, Aurora, Illinois
Steel Shelving . . . Parts Bins . . . Drawer Units

NEW LITERATURE—Continued

If you write maker identify as IEN - 027

ELECTRONIC PRODUCTS . . 196-page Catalog 56 of products from amplifiers to wire includes tubes, components, hardware, tools, test equipment. Newark Electric Co., 223 W. Madison St., Dept. IEN, Chicago 6, Ill.

If you write maker identify as IEN - 028

ELECTRONIC PRODUCTS . . Equipment made by the company for electronic industry includes instruments, transformers, magnetic amplifiers, electronic tubes. Bulletin B-6093, 16 pages, is a summary. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 029

ELECTRONIC TUBES . . Cathode-ray tube for oscillograph service comes in three 5-in. models in 5AB series. Characteristics and a typical circuit diagram are given in 12-page Bulletin 5ABP-1-7-11. Radio Corporation of America, 413-17 S. 5th St., Harrison, N. J.

If you write maker identify as IEN - 030

FANS . . Propeller-type fans in 12 to 60-in. sizes, also duct fans, axial-flow units, centrifugal blowers, man coolers, power roof ventilators, unit heaters. Bulletin A-109, 44 pages, gives ratings. Hartzell Propeller Fan Co., 1023 Roosevelt Road, Dept. IEN, Piqua, Ohio

If you write maker identify as IEN - 031

FASTENINGS . . Open-side retaining rings are supplied stacked to avoid tangling in their shipping container. The company offers to furnish a support base and applicator tool with your initial order of 1,000 rings. Details on the offer in 4-page "Stacked Rings" folder. Industrial Retaining Ring Co., 10 W. Sidney Ave., Dept. IEN, Mount Vernon, N. Y.

If you write maker identify as IEN - 032

FASTENINGS . . Specialty units for quick-removal panels, also drive rivets, pawl-type panel fasteners, door latches, spring fasteners, anchor nuts. Drawings and data in 24-page "Southco Fasteners." South Chester Corp., 1400 Finance Bldg., Dept. IEN, Philadelphia 2, Pa.

If you write maker identify as IEN - 033

FASTENINGS . . Stock types and sizes of stainless-steel cap screws, nuts, washers, machine screws, wood screws, set screws, rivets, pins, nails. Catalog 53-B, 20 pages. Star Stainless Screw Co., 190 Union Ave., Dept. IEN, Paterson 2, N. J.

If you write maker identify as IEN - 034

FASTENINGS . . Alloy steel screws and reasons for using them are incorporated into a set of product design suggestions with drawings in 16-page Mac-it booklet, "Improved Product Design." Strong, Carlisle & Hammond Co., 1392 W. 3rd St., Dept. IEN, Cleveland 13, Ohio

If you write maker identify as IEN - 035

LIQUID FILTERS . . Synclinal folded-element filters for water come in sizes from 5 to 100 gpm. The element is 100-mesh Monel Metal wire cloth. Flow and pressure-drop table is given in 12-page Catalog 300. Marvel Engineering Co., 625 W. Jackson Blvd., Dept. IEN, Chicago 6, Ill.

If you write maker identify as IEN - 036

FLOCK . . How to use it, how to apply it, suggestions on adhesives are presented in new 12-page bulletin, "Flock", with a table of comparative properties on two types. Cellusuede Products Inc., 502 N. Madison St., Rockford, Ill.

If you write maker identify as IEN - 037

FLOORS . . Requirements by type of industry are stressed in 20-page booklet 168-11 along with a summary on materials for repair and resurfacing, floor treatment. Monroe Co., 10701-5 Quebec Ave., Cleveland 6, Ohio

If you write maker identify as IEN - 038

HYDRAULIC FLUID . . Clear oily material is non-flammable, non-corrosive and non-toxic. Performance test data is in new 6-page bulletin, "Houghto-Safe." E. F. Houghton & Co., 303 W. Lehigh Ave., Dept. IEN, Philadelphia 33, Pa.

If you write maker identify as IEN - 039

GAGES . . Reversible plug gages, reversible thread gages, thread ring gages and setting plugs. List prices in steel and carbide in 4-page Bulletin C-53. Size Control Co., 2590 W. Washington Blvd., Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 040

PNEUMATIC GAGES . . Dimensionair gage employs a differential air circuit, something like the Wheatstone Bridge in an electrical measuring circuit, for dimensional gaging. Typical circuit, how-it-works description, uses are in 24-page Catalog 53-B. Federal Products Corp., 1144 Eddy St., Dept. IEN, Providence 1, R. I.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 834

MILL IT *faster*.. SAVE LABOR!

Kent-Owens advanced features mean *speed, accuracy* and *dependability*... in tool room or production milling. Rugged . . . simple in design and operation. Saves labor . . . reduces costs! Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

If you write maker identify as IEN - 835

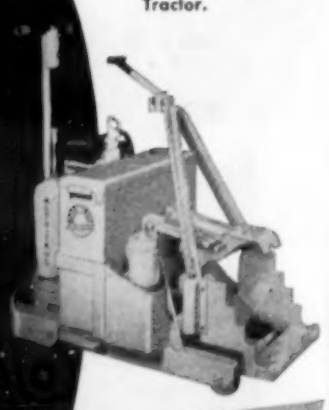
Engineered

Pallet type "Walkie" truck 4000 to 6000 lb. capacity.

TO FIT YOUR JOB . .

***Custom Built or . . . Standard Models**

Model G. A. Tractor.



Whether your materials handling job requires special applications or is adaptable to standard models, the cost is relatively the same.

Our Engineers will welcome the opportunity to discuss YOUR particular material handling job . . . Moto-Truc's can be engineered to fit the job. Investigate their "Job application" offer in the economical "Walkie" type lift trucks. Your inquiry will receive prompt attention.

. . . AT NO EXTRA COST*

SEND FOR BULLETIN #53

Platform "Walkie" type 4000 to 10,000 lb. capacity.

Hi-lift "Walkie" type 3000 to 4000 lb. capacity.

Representatives in Principal Cities

The MOTO-TRUC Co.

MOTO-TRUC Designed for the Industry PATENTED

1987 E. 59th STREET • CLEVELAND 3, OHIO

PALLET . . . PLATFORM . . . HI-LIFT TRUCKS

LARGEST EXCLUSIVE MANUFACTURERS OF "WALKIES"

If you write maker identify as IEN - 837

Indus Wheels Solve Wheel Problems

Send for SPECIFICATIONS AND PRICE SHEETS FOR INDUSTRIAL AND JUVENILE

WHEELS

- Semi-Pneumatic, Pneumatic, or Solid Tires
- Tire Load Ratings to 925 pounds
- Wheel Sizes 2½" to 16"
- Available with ball, roller or Grafoil bearings
- Baked enamel finish to customer's specifications

INDUS CORPORATION
1817 MADISON AVENUE
INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 838

PEG-BOARD

adjustable storage unit

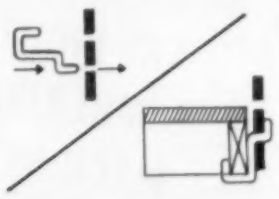
NEW LOW-COST, STRONG INDUSTRIAL SHELVING
NOW AVAILABLE FOR IMMEDIATE DELIVERY

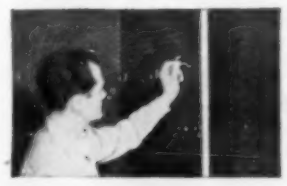
EASY TO ASSEMBLE
2-sided, 6 section unit (384 cu. ft.) assembled in LESS than 30 minutes.

You can order "PEG-BOARD" industrial shelving units to fit your specific storage requirements. They are easy to assemble, yet carry a heavy load. Made of tough perforated hardboard mounted to sturdy cross-braced frames, the "PEG-BOARD" storage unit gives you economy, versatility and strength.

Shelves adjust to any height on 1" spacings

Shelves are inserted or adjusted in a matter of seconds with special self-locking hangers as illustrated below. No tools of any kind required for assembly.





Photos above show how easily shelves are hung in this new unit. Shelves may be positioned at any height on upright sections. Each shelf is tough hardboard mounted to cross-braced frame. 1000 lb. load per shelf. The new "PEG-BOARD" low-cost units are available now . . . no waiting for delivery.

WRITE NOW FOR FREE BOOKLET . . . gives complete specifications, suggested arrangements, assembly details and prices.

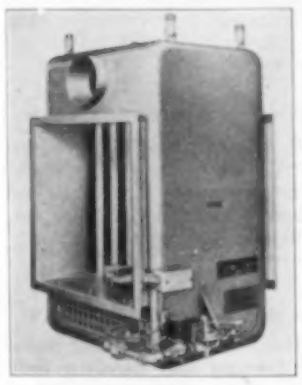
Copyright 1953 by B. B. BUTLER MFG. CO., INC.
3161 Randolph Street • Bellwood, Illinois

PEG-BOARD" is the reg. T.M. of the B. B. Butler Mfg. Co., Inc. used to identify its products.

If you write maker identify as IEN - 840

HEATING . . Gas fired space unit to install in a blower equipped duct

Source: UNITED STATES AIR CONDITIONING CORP.
3318 Como Ave., Dept. IEN, Minneapolis 14, Minn.



Bulletin 23A-DU

Twelve models range from 65,000 to 500,000 btu. per hour in input capacity for this new Series 23A-DU line. The unit is available to burn any type of gas. It is designed for heating and air tempering duty where the air is circulated by an independently located blower through a rectangular duct. A built-in draft diverter permits installation at 6 in. or more from a ceiling or wall.

The controls can be wired to operate simultaneously with the duct blower motor so the gas supply is turned on and off as the blower is started and stopped. Control also can be established by a thermostat in the delivery end of the duct.

If you write maker identify as IEN - 841

HOSE FITTING . . Ratchet clamp for quick application and removal

Source: TINNERMAN PRODUCTS INC.
Box 6688, Dept. IEN, Cleveland 1, Ohio

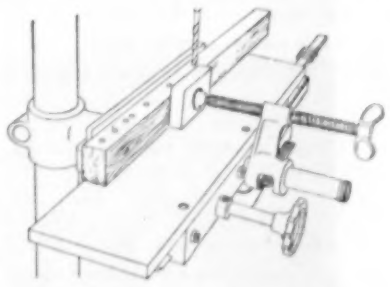
Snaps into place

Ratchet teeth extend back from one end of this new Speed Clamp. They engage a cross latch formed integral with the opposite end. The clamp applies by hand to make initial contact. Then it is tightened by employing a plier against shoulders formed by lugs raised along the center line of the spring steel unit. The clamp takes three hose sizes from 1 to 1¼ in. and has been designed to secure hoses to oxygen masks in aircraft duty. It is suited for use on other hose assemblies, carrying comparatively low pressures, where quick application and removal are desired.

If you write maker identify as IEN - 842

WOODWORKING . . Vise and carriage to position work on a machine table

Source: J. D. WALLACE & CO.
134 S. California Ave., Dept. IEN, Chicago 12, Ill.



Versa-Table

Work pieces can be secured and positioned for repetitive cuts or can be fed to a cutter for routing, planing, grinding with this new combination vise and carriage. A clamp holds the material to the table fence. A hand wheel advances it. Each complete turn of the hand wheel moves the table about 2 inches. Total traverse movement is 12 inches. Positioning is by a graduated bar fitted with adjustable stops for desired spacing steps within the overall movement. List price is $49.50.

If you write maker identify as IEN - 843

CAPACITOR . . Heavy duty unit for 50 amp. 110/220 volt ac. circuit

Source: SPRAGUE ELECTRIC CO.
165 Marshall St., North Adams, Mass.

Bulletin 216

Thru-Pass trade names this new interference suppression capacitor. It employs a shell with external threads except on two straddle milled flats. The unit mounts in a flatted circular hole, in a chassis or bulk head wall, where the flats prevent rotation. Nuts lock the unit in place against loosening under vibration. A noise-proof path encircles the feed-thru conductor.

Construction employs glass-to-metal solder seal terminals, ability to operate in a range between minus 55 and plus 85 deg. C. Each unit is impregnated for insulation resistance and minimum capacitance change with temperature change.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

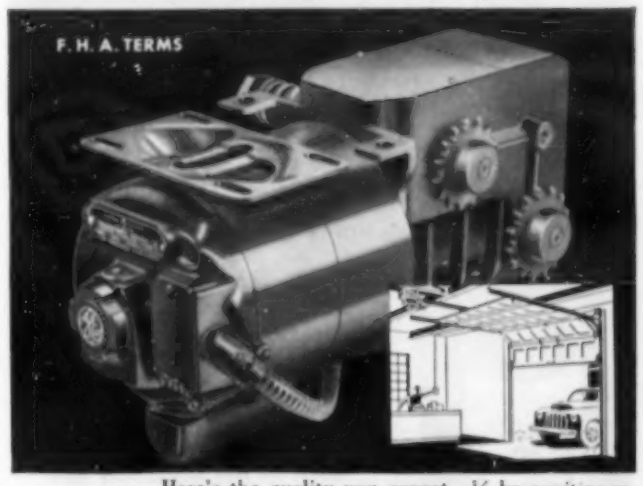
If you write maker identify as IEN - 844

BARBER COLMAN

Barcol.

Electric Operators

Only $230* for this new Model L for doors open up to 12 feet high



Here's the quality you expect—¼ hp positive-reversing motor, safety engineered with adjustable slip clutch, thermal overload and ball-bearing chain drive. In case of power failure, a handy clip release unlocks the door for manual operation. Save heat dollars, save time dollars—ask your local "Barcol" distributor (listed under "Doors" in telephone directory) or write. *F.O.B. Rockford, Ill.

BARBER-COLMAN COMPANY, DEPT. V41, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 845

DESIGNERS
for COMPARATIVE AND ULTIMATE STRENGTH TESTS, ETC.

INSPECTION
of PARTS AND ASSEMBLIES, ETC.

LABORATORY TESTING
of SCREWS
SOCKETS
TAPS
LOCK NUTS
DRIVING BITS
HAIR SPRINGS, ETC.

PRODUCTION QUALITY CONTROL
for DELICATE OPERATIONS, ASSEMBLY OF FRAGILE MECHANISMS OR INSTRUMENTS, FOR FASTENERS IN PLASTICS AND LIGHT METALS.

Torque Testing FIXTURE

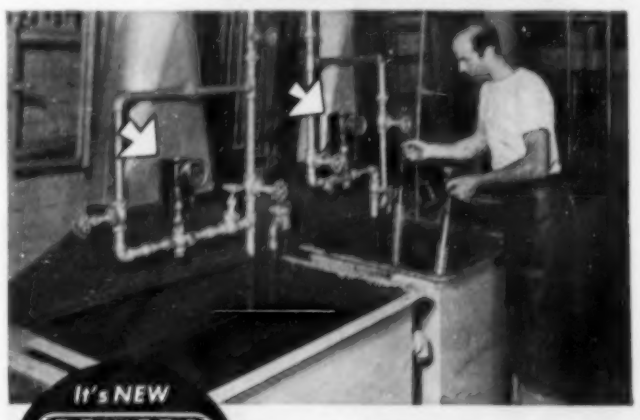
A universal fixture with 1000 uses. Holds driver in accurate alignment; in instrument bearings. Provides rapid engagement with test sample...torque is applied and measured with Sturtevant Torque Wrench.

Model TTF¼ Capacity 0-200 in. lbs.
Model TTF½ Capacity 0-150 ft. lbs.

Write for Bulletin TF

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

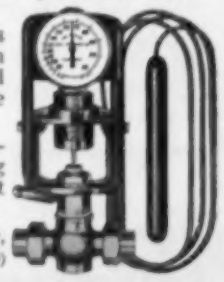
If you write maker identify as IEN - 846



It's NEW
POWERS
Temperature Regulator for Plating • Pickling Banderizing Chromate Dips Cleaning • Rinsing

Saves LABOR and Steam Helps Eliminate Costly Rejects

POWERS No. 11-MF Regulator insures most effective use from various solutions by holding them at the right temperature automatically.



Plastic Thermal Bulb and Tubing is highly resistant to solutions used in above processes. Prevents electrical shorts. No insulators required for the regulator.

Easy to Read 4" Dial Thermometer indicates temperature of liquid being controlled and makes it easy to adjust regulator for different temperatures.

Bulletin 330 fully describes this simple, self-operating regulator. (b50)

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

If you write maker identify as IEN - 847

Look for this mark it stands for

CURTIS UNIVERSAL JOINTS

Since 1919 Curtis has concentrated on the manufacture of only one line. As a result, Curtis research, production and quality control techniques have produced the widely accepted Curtis standards — and the world's best universal joint.

ONLY CURTIS OFFERS ALL THESE BENEFITS

Availability — 14 sizes in stock; ⅝" to 4" O.D., bored or unbored hubs.

Quality Standards — Curtis Joints set the standards for the industry.

Simplicity — fewer parts, simpler construction.

Constant Tests — catalog figures substantiated by constant tests in the factory.

PLUS — facilities and engineering skill to handle special specification jobs available.

Not sold through distributors; write direct for free engineering data and price list.

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Avenue Springfield, Mass.

As near to you as your telephone

Trade Mark

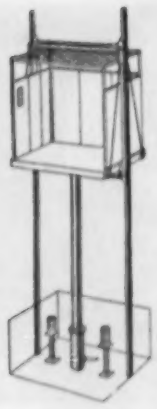
A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 848

Rotary Oildraulic®

HEAVY-DUTY ELEVATORS

Easy to install
economical to operate



FEATURES:

- Modern hydraulic operation
- No costly, unsightly penthouse
- Smooth starts and stops
- ¼" accuracy on landings
- Low operating and upkeep expense
- Rugged car construction
- Engineered for power truck loading
- High efficiency power units
- New Oildraulic Controller
- Capacities up to 100,000 lbs.

Over 65,000 Oildraulic elevators and lifts are now in use . . . backed by Rotary's coast-to-coast organization.

MAIL NOW FOR NEW CATALOG

ROTARY LIFT CO., 1113 Kentucky,
Memphis 2, Tenn.

Send catalog on Rotary Oildraulic Elevators to:

Name_____

Address_____

Rotary

OILDRAULIC ELEVATORS

NEW LITERATURE—Continued

If you write maker identify as IEN - 041

GASKETS . . Paper, fibre, belt, asbestos, rubber, cork and plastic are employed in gaskets and packings made by the company. How to select the right material for a given type of service is described in 8-page catalog. Felt Products Mfg. Co., 1523 Carroll Ave., Chicago 7, Ill.

If you write maker identify as IEN - 042

GENERATORS . . Catalog 753 has 28 pages of specifications on dynamotors including performance oscillographs and dimensions. It also covers the company's new Change-A-Volt dynamotor and its heavy-duty Genemotor. Carter Motor Co., 2644 N. Maplewood Ave., Dept. 10, Chicago 47, Ill.

If you write maker identify as IEN - 043

HANDLING . . Shovel-equipped tractor with four-wheel drive has 1½-yard capacity for loading and handling bulk material. Bulletin AD-55, 8 pages. Baker-Lull Corp., 312-16 W. 90th St., Minneapolis 20, Minn.

If you write maker identify as IEN - 044

HANDLING . . Woven wire sling has a flat flexible surface that grips a load securely with minimum tendency to crush. Application suggestions in picture form are shown by 20-page "Gripper-Sling" bulletin. Cambridge Wire Cloth Co., Vienna Road, Dept. IEN, Cambridge, Md.

If you write maker identify as IEN - 045

HANDLING . . Slide mechanism supports equipment such as an electronic chassis, pulls out, pivots and locks for convenience in maintenance and repair. These and others in "Industrial Slides," 4 pages. Grant Pulley & Hardware Corp., 31-87 Whitestone Parkway, Dept. IEN, Flushing 54, N. Y.

If you write maker identify as IEN - 046

HANDLING . . Hook for metal coils is counterbalanced so its arm is level, ready to be entered into a coil. Capacity in a range of sizes is for 1,000 to 40,000-lb. coils. Catalog Section 5-N, 8 pages. F. J. Littell Machine Co., 4127 N. Ravenswood Ave., Dept. IEN, Chicago 13, Ill.

If you write maker identify as IEN - 047

HARD FACING . . Alloy is applied by metal spraying on a prepared surface, then is fused into place with a torch to produce a smooth, homogenous coating. Examples of this Sprayweld process are in 4-page Bulletin 53-B. Metallizing Engineering Co., 38-16 30th St., Long Island City 1, N. Y.

If you write maker identify as IEN - 048

ELECTRIC HEATING . . 84-page catalog on electric element and equipment covers selection, specifications and applications for strip heaters, immersion units, hot plates, air heaters, controls. Industrial Engineering & Equipment Co., 711 S. Theresa, Dept. IEN, St. Louis 3, Mo.

If you write maker identify as IEN - 049

HEATING ELEMENTS . . "Hot Rods" is the company's name for its silicon-carbide heating elements for electric furnaces and kilns, originally developed for its own use. Application data is detailed in 24-page Bulletin 146. Norton Co., 36 New Bond St., Dept. IEN, Worcester 6, Mass.

If you write maker identify as IEN - 050

HEAT TREATING . . Allcase controlled-atmosphere batch furnace is a gas-fired radiant-heat-tube unit with a recirculating fan and enclosed quench. One man can run it. Details are given in 6-page Bulletin SC-163. Surface Combustion Corp., 2375 Dorr St., Dept. IEN, Toledo 1, Ohio

If you write maker identify as IEN - 051

HOISTS . . Chain and wire rope types with electric drive, capacity ¼ to 1½ ton in five sizes, trolley and hook suspension. "Load King" Bulletin P-1538-B, 8 pages, gives list prices. Yale & Towne Mfg. Co., 11600 Roosevelt Road, Dept. IEN, Philadelphia 15, Pa.

If you write maker identify as IEN - 052

FLEXIBLE METAL HOSE . . Corrugated and convoluted, range of metals and fittings, also metal bellows in brass, bronze, stainless steel, Monel. Catalog CMH-132, 16 pages. Flexonics Corp., 1333 S. Third Ave., Maywood, Ill.

If you write maker identify as IEN - 053

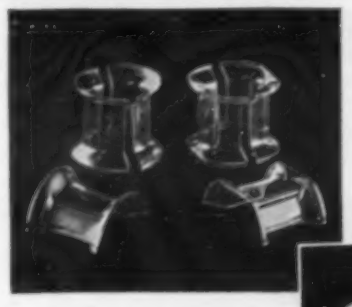
INSULATING . . Superfine Fiber Glass is offered for thermal and sound insulation by new 16-page Bulletin F-11. One section contains a number of possible application sketches with the title, "Thought Starters." Libbey-Owens-Ford Glass Co., Wayne Bldg., Dept. IEN, Toledo 3, Ohio

If you write maker identify as IEN - 054

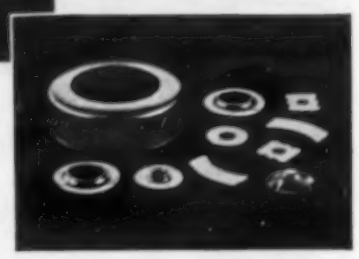
KEYSEATING . . Cut your own keyways by hand, urges 12-page "Minute Man" catalog, by means of the company's broach kits that come in widths from 1/16 to 1 inch. The catalog describes operation, suggests lubricants. du Mont Corp., du Mont St., Dept. IEN, Greenfield, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 850



HOW TO SAVE MOLD COSTS...



on Insulators, Washers and Small Parts Plastic-Fabricated by

SILLCOCKS-MILLER

Sillcocks-Miller engineers now enable you to get small plastic parts, such as insulators, washers, etc. through a special fabricating process that saves the cost of molds.

The development of this process has opened the possibility of fabricating thin wall pieces such as insulators, etc., and offers economy without sacrifice of quality or service life.

You are invited to submit your specifications on small parts of this type for recommendation.

The SILLCOCKS-MILLER Company
Pioneers in Plastic Fabrication since 1910

27 West Parker Avenue • Maplewood, N. J.

If you write maker identify as IEN - 851

TWO PRESSES for the PRICE OF ONE . . .

A DEEP DRAW PRESS — A PRESS BRAKE

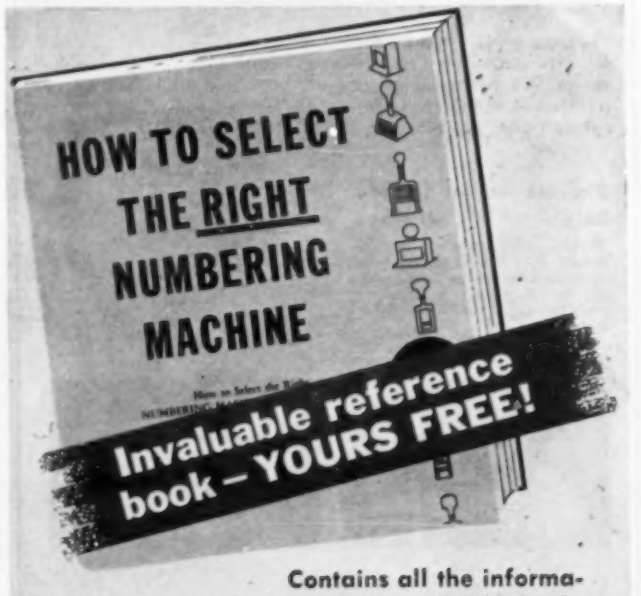
This 100 ton PACIFIC HYDRAULIC PRESS BRAKE is unique as a draw press because it provides a maximum of accessible working space without corner strain rods. It also can be easily converted to a press brake in less than ten minutes by removing the upper platens. As a press brake, it incorporates all of the advantages of "The Pacific" — the first really safe brake. It can't be jammed — the stroke is infinitely adjustable from ⅛" to 10" with full tonnage available throughout the stroke — It accurately straightens and air bends — It is designed for heavy punching and blanking at any point along the bed.

PACIFIC HYDRAULIC PRESS BRAKES have proved themselves by years of daily operation throughout the World.

Sales and service available in all major cities of the United States. Call us for assistance in supplying a machine to fit your special needs.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

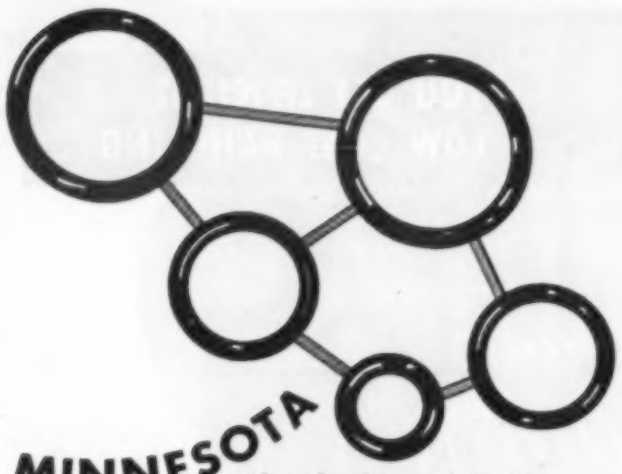
If you write maker identify as IEN - 852



Contains all the information you need to select exactly the right Hand Numbering Machine or Metal Dater for any job, plus scores of time-saving ideas. Includes uses, figure sizes, performance specifications for all standard models. Supply limited. *Write for your free copy.*

WM. A. FORCE
& COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN - 853



MINNESOTA

the O-ring with the FORMULA for strength, accuracy and uniformity

INJECTION MOLDED Minnesota O-rings meet specific requirements for hydraulic seals with close tolerances and without flash or trim. They function in air, gas or hydraulic systems including cylinders, hydraulic valves, water pumps, hoisting mechanisms, hydraulic brakes, bottling machines and engines. *Write for the O-Ring Bulletin.*

Also manufacturers of U and V seals . . . grommets . . . washers . . . and small parts made of rubber and synthetics including silicone, thiokol and saran.

MINNESOTA RUBBER & GASKET COMPANY
3630 WOODDALE AVENUE • MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 854

● That's a good idea. There are many places in piping layouts where you can use a WECO Wing Union. You get a pressure-tight seal with a few simple hammer blows on the wing nut. Let us tell you about the WECO Wing Unions that are famous throughout the oil industry.

Send for this new bulletin which has been prepared especially for you. It gives all the facts about WECO Wing Unions, which are available in 1,000 to 15,000 p.s.i. and sizes 1" through 10".

It's Wise to Standardize with... WECO ...

WELL EQUIPMENT MFG. CORP.
Division of Chiksan Company
HOUSTON 1, TEXAS
CHIKSAN COMPANY
Bronx, Calif. Chicago 28, Ill. Newark 2, N. J.
CHIKSAN EXPORT COMPANY Bronx, Calif. Newark 2, N. J.
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

If you write maker identify as IEN - 856

DRILLING . . Upright machines, cone pulley drive, 5/8 to 1 1/2 in.

Source: EDLUND MACHINERY CO.
37 Huntington St., Dept. IEN, Cortland 44, N. Y.

Bulletin 120 and 130

Four sizes are included in a new Model-B line of vertical motor cone pulley design drilling machines. The smallest is available with 1 to 6 spindles in throat dimensions of 7 and 12 inches. Two intermediate sizes can be specified with 1 to 8 spindles. The smallest of these two sizes has an 8-in. throat. The other is available in 12 and 15-in. throats. The largest mounts 1 to 4 spindles and is made with 12 and 16-in. throats.

Speed range is 500 to 2,080 rpm. for the smallest machine, 80 to 2,004 rpm. for the largest. Drilling capacities are respectively 5/8, 1 1/4 and 1 1/2 inches. The machines employ a standard ball bearing motor of open or enclosed design.

If you write maker identify as IEN - 857

CONTROL . . Signal transmitter and receiver for specific gravity

Source: AMERICAN RECORDING CHART CO.
3111 E. 11th St., Los Angeles 23, Calif.

Data in Bulletin 111-R2B

Combinations of recording, indicating, transmitting, controlling can be set up, with the company's standard Arcco-Anubis liquid gravitometer and new metameter telemeter transmitting equipment, to keep track of specific gravity at a remote location. Complete equipment consists of the transmitting gravitometer, the receiver, the transmitting power source and an electric interconnecting line or channel between the sending and receiving points.

The transmitter is located close to the point of measurement of the specific gravity. The received can be located at any distance away. The transmission channel, or interconnecting line, can be any two-wire circuit or a carrier current, radio, or other channel involving a ground return.

Readings are transmitted as a function of time in the form of successive current impulses at 5-sec. intervals. The value of the reading determines the length of time in each interval that a signal switch remains closed. This, in turn, determines the position of the pen on the chart in the receiver.

If you write maker identify as IEN - 858

STAMPINGS . . Contract work minimizes tool making for short runs

Source: DAYTON ROGERS MFG. CO.
2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.

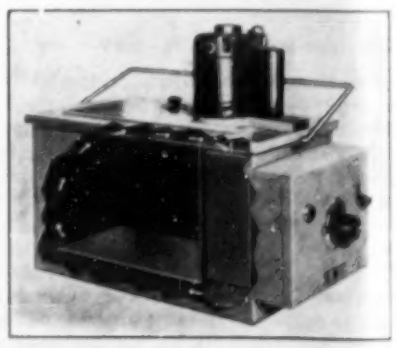
Typical examples

Die cut blanks, guaranteed flat in sizes measuring 6 by 12 in. or larger, are now available in the company's recently improved setup to produce stampings to specification with minimum tool cost. The service is intended primarily for short runs calling for a cost that does not involve expensive tooling and that can produce the pieces quickly. The company defines small lots as any number between 100 and 10,000.

If you write maker identify as IEN - 859

MELTING . . Electric tank to hold hot dip coating plastics

Source: GLOBE IMPERIAL CORP.
2021-25 Kishwaukee St., Rockford, Ill.



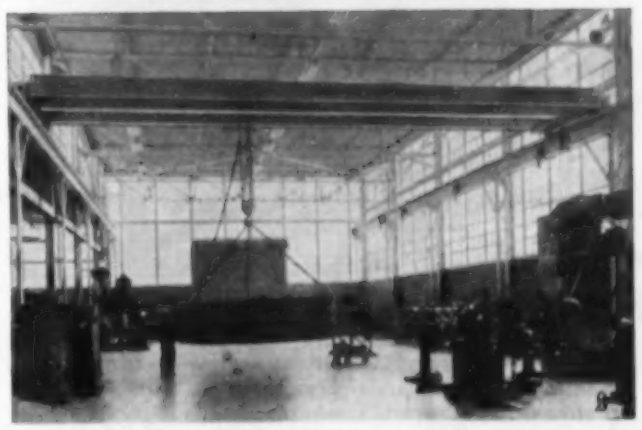
Dip coats small work

Electric elements radiate heat to the sides while a motor driven impeller maintains positive circulation and a Robertshaw thermostat holds temperature in the molten plastic at the correct point in this new P/87 bench type tank. It has been added to the company's line of larger equipment, previously described IEN-31-53. Capacity is 14 pounds. Operation is on 110-volt ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 860

NORTHERN HI-LIFT OVERHEAD CRANES



For Safety—Durability—Dependable Operation with minimum maintenance—these NORTHERN HI-LIFT CRANES are especially developed for low headroom operation and floor control. Let us send you further details in

BULLETIN HL-115-R

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 861

Electronic Temperature Control

...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Rm. 517 420 N. La Salle Street, Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 862

conform to J. I. C. standards

RUGGED . . .

Where it counts most!

CARTRIDGE . . . metallic rod-wiper, packing, bushing in one unit.
RUGGED BODY . . . all steel end caps and barrel.
PISTON RINGS . . . step-cut joint, long life, minimum leakage.
PRESSURE . . . 2,000 psi heavy-duty . . . 3,000 psi non-shock.
SIMPLICITY . . . no tie-rods . . . no retainer rings.

hydro-line *Manufacturing Co.*
5610 PIKE ROAD • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 863

NEW SELF-ADJUSTING BLOW RINGS

Patented By DAY and HERSEY

FOR MORE EFFICIENT DUST FILTERING

DAY "AC" Dust Filters are now better than ever with Self-Adjusting Blow Rings compensating for even the slightest variation in the filter tubes due to changes in pressures, temperatures, moisture conditions, etc. This improvement to a widely acclaimed dust filter assures you added efficiency and economy in controlling dust.

WRITE toDAY FOR BULLETIN (528-R)

It contains new information on dust control.

The DAY Company
813 3rd Ave. N. E.
MINNEAPOLIS 13, MINN.
IN CANADA: P.O. Box 707, Ft. William, Ont. Branch Plants in Buffalo, Ft. Worth and Welland, Ont.

DAY SINCE 1881 DUST CONTROL
A SINGLE UNIT OR A COMPLETE SYSTEM

If you write maker identify as IEN - 864

Quick as a wink measure both AC and DC

WITH A COLUMBIA TONG TEST AMMETER

(Voltage attachment available)

- Both AC and DC ampere readings are made instantly and accurately without breaking circuit or scraping insulation
- Operated with one hand by merely clamping tongs around conductor
- Cannot burn out
- Scale ranges up to 1000 amperes AC or DC
- Voltage attachment reads up to 600 volts
- Five types to accommodate cables up to 3⅞", bus bars up to 4½"x½"

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

If you write maker identify as IEN - 865

Do You REALLY Know The Facts About Laminated Plastic Tubing?

Do you know when to use laminated tubing? Whether to use "rolled" or "molded" tubes . . . which grade will best fit *your* application? Are you familiar with the variety of rods and tubular shapes—such as channels, angles, squares, ovals, polygons—which are available? Do you know that laminated plastic tubing is an excellent insulation, mechanically strong, tough, dense, light in weight, resists heat, water, corrosives, oils, solvents?

To get the answers to these and other questions you may have about laminated plastic tubing, use the coupon below for your copy of the SYNTHANE Tubing Catalog.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
5. River Road, Oaks, Pennsylvania

Gentlemen:
Please send me the SYNTHANE Tubing Catalog.

Name _____
Address _____
City _____ Zone ____ State _____

NEW LITERATURE—Continued

If you write maker identify as IEN - 055

LIGHTING . . How fluorescent lamps work, why ballasts are required, ballast types and circuits, suggestions on installation and operation. Bulletin GET-922F, 12 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

If you write maker identify as IEN - 056

LUBRICATING . . Spray valve for open gearing is one of six applications of the company's lubricating equipment described in current "Studies in Centralized Lubrication." Farval Corp., 3293 E. 80th St., Dept. IEN, Cleveland 4, Ohio

If you write maker identify as IEN - 057

MACHINERY . . Special Machinery Division of the company offers facilities of its new $5 million plant to design and build special machine tools. Examples and facilities in 12-page "Doorway." Kearney & Trecker Corp., 6784 W. National Ave., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as IEN - 058

MARKING . . 24-page "Idea Book" of suggestions on how to use labels for shipping, packaging, cautions, production. Ever Ready Label Corp., 357-363 Cortland St., Dept. IEN, Belleville 9, N. J.

If you write maker identify as IEN - 059

MARKING . . Luminous materials are supplied by the company in radioactive, phosphorescent and fluorescent types. Summary and uses in 8-page pocket-size bulletin, "Luminous Materials." Sampson Chemical & Pigment Corp., 2830 W. Lake St., Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 060

METAL PARTS . . Spinning, deep drawing, Hydroforming, stamping are employed by the company to produce formed metal products in materials from aluminum to tantalum. Bulletin, "Precision Metal Forming," 16 pages. C. B. Kaupp & Sons, Newark Way, Dept. IEN, Maplewood, N. J.

If you write maker identify as IEN - 061

METAL PARTS . . Aluminum is bonded to steel, cast iron or stainless steel to combine best features of both metals such as an aluminum gear with a steel hub. Details on the process and examples of parts are given in 8-page bulletin, "Alumibond." Arthur Tickle Engineering Works, 21 Delavan St., Dept. IEN, Brooklyn 31, N. Y.

If you write maker identify as IEN - 062

PREFINISHED METAL . . Eight product application ideas are presented in new 8-page Bulletin PF-264 as examples of how to use prefinished metals. Properties, metals, sizes, finishes, fabrication are included. Apollo Metal Works, 6652 S. Oak Park Ave., Dept. I-8, Chicago 38, Ill.

If you write maker identify as IEN - 063

MIXING . . Impeller-type mixers for paint, chemicals, pharmaceuticals. Bulletin 531, 4 pages, covers tanks and agitators, frame and drum-mounting units. Bulletin 532, 4 pages, is on vertical and side-entry units ¼ to 25 hp. Conn & Company, 11 S. Marion St., Dept. IEN, Warren, Pa.

If you write maker identify as IEN - 064

MOTORS . . Lubriflush feature of the company's electric motors forces grease through the bearings to purge used lubricant. Transparent plastic demonstration models in 8-page Bulletin 1848 show how it works. U. S. Electrical Motors Inc., Box 2058, Dept. IEN, Los Angeles 54, Calif.

If you write maker identify as IEN - 065

MOTOR BRUSH HOLDERS . . Custom-made units for fhp. motors are based on 12 standard series with molded bodies and molded caps, all made with stock tools for original equipment manufacturers. Catalog 53-H, 21 sheets. Phoenix Electric Mfg. Co., 709-13 W. Lake St., Chicago 6, Ill.

If you write maker identify as IEN - 066

PLASTIC MOLDING . . Flexible vinyl-plastic injection molded parts are the subject of 60-page catalog free on request by product design engineers. Price is $3.50 to others. There are 38 pages of test data showing effects of plasticizer and conditions on physical properties. Hungerford Plastics Corp., 653 Rockaway Ave., Rockaway, N. J.

If you write maker identify as IEN - 067

PLASTICS . . Combination textbook and catalog includes information on materials, equipment, supplies, has samples on some, tells how to fabricate materials, gives list prices of standard products. "Plastics Manual and Catalog," 114 pages, list price $1. Fry Plastics Co., 7826 S. Vermont Ave., Dept. IEN, Los Angeles 44, Calif.

If you write maker identify as IEN - 068

PRESS TOOLS . . Hole punching units for curved and straight flanges and rims act to perforate the side of the work. They mount in a stamping press or press brake, are designed so the punches move back and forth horizontally. Catalog H, 8 pages, shows how they work. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 866

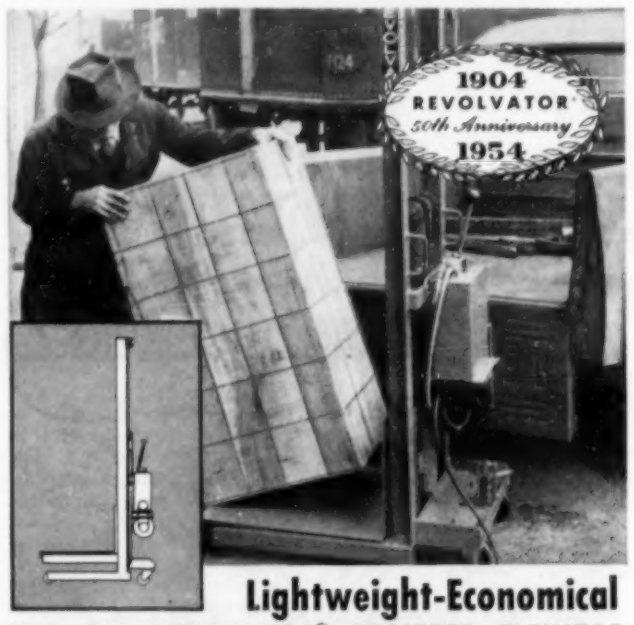
WHEN YOU USE "STREAMLINER" CONVEYORS

"Streamliner" Gravity Roller Conveyors are "custom-engineered" in several types to meet special as well as standard requirements. No doubt you can use such a cost cutting conveyor in your plant. To get examples of these conveyors in action, write for Bulletin 100.

"Streamliner" Gravity Conveyors • Power Conveyors • Conveyor Systems

HARRY J. FERGUSON COMPANY
125 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as IEN - 867



Lightweight-Economical

IT'S THE REVOLVATOR® UPLIFTER ELEVATOR

Adaptable for shop use or warehouse handling and ideal for shipping and receiving — the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models — the Revolvator Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

Priced under all competition, the Uplifter includes all the safety and convenience features that have made Revolvator portable elevators a standard in industry. Get full information today on this new, easy operating inexpensive portable elevator. Remember, too — we build Revolvator Portable elevators to your particular needs.

Write or phone
REVOLVATOR CO.
8759 TONNELLE AVENUE, NORTH BERGEN, N. J. • UNion 3-8120

If you write maker identify as IEN - 868

Let Smoke and Fumes out *Fast* through AIRMOVER Roof Ventilator to help keep fire from spreading

The worst handicap to fighting the fire at General Motors' Hydramatic plant was dense smoke and fumes. Flame sources could not be located. Fusible link arrangement available on damper control of Airmover lets dampers open wide automatically in event of unusual heat. Installs readily on old or new buildings. Here's a valuable "safety valve" for all industrial buildings. Write for Bulletin AM-B.

18511 Euclid Avenue, Cleveland 12, Ohio
The Swartwout Co.
Roof Ventilators and Ventilating Louvers
POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS

If you write maker identify as **IEN - 869**

THE *Sutton* MOTOR DRIVEN PRESSURE BLOWER

THREE SIZES
¼, ½, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 4 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6". **WRITE FOR LITERATURE AND PRICES.**

Sutton *Manufacturing Corp.*
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as **IEN - 870**

STANDARDIZE On this "*Packing Package*"

Now, the United States Gasket Company offers you one source of supply and undivided responsibility in a complete line of synthetic rubber "O" Rings and companion Teflon* Back-up Rings for all military and commercial requirements.

- **CHEMISEAL "O" RINGS** of resilient, homogeneous synthetic rubber are absolutely non-porous and withstand a wide temperature range. They are available in both commercial and AN compounds.
- **CHEM-O-GREEN BACK-UP RINGS** are made of chemically inert duPont Teflon, colored green for identification purposes. They are made in three types, solid rings, split rings and the popular improved spiral type which adjusts itself to the groove and, on compression, becomes in effect, a solid ring of the required diameter and thickness.

The advantages of Chem-o-green (Teflon) Back-up rings are many.

Chemical inspections may be eliminated as Teflon is non-corrosive. Zero swelling in all hydrocarbons or newer synthetic hydraulic fluids or solvents. Service temperature range from minus 110° F to 500° F. Unsurpassed anti-friction properties. Waterproof, non-flammable. Long wearing. Requires no water-soak for installation.

Write for Bulletin OB-1152.

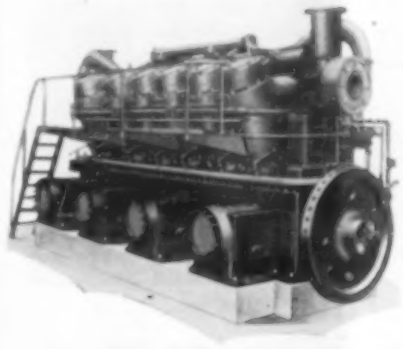
**duPont Trademark*

UNITED STATES GASKET COMPANY
FLUOROCARBON PRODUCTS DIVISION
CAMDEN 1, NEW JERSEY
Representatives in Principal Cities Throughout the World

If you write maker identify as **IEN - 872**

COMPRESSOR . . Gas engine drive, integral design, supercharged engine

Source: INGERSOLL-RAND COMPANY
746 Morris Ave., Phillipsburg, N. J.



Four cycle operation

Rating is 2,000 hp. for this new Type-412 KVS compressor and its turbocharged integral gas engine drive. There are four compressor cylinders, all on one side of the engine, spaced 5 ft. apart. The compressor pistons are driven by six engine pistons, the former operating on a 15-in. stroke and the latter on an 18-in. stroke. Four of the six engine pistons operate on compound crankpins on the crankshaft. Two of the engine pistons apply on individual crank leave compressed air, at about 4 lb., in the cylinders for the pins. The design provides power piston speed of 990 fpm. and compressor speed of 825 fpm.

Turbocharging, applied to the engine, is a combination of scavaging and supercharging by means of exhaust driven turbines and centrifugal blowers at both ends of the assembly. Inlet and exhaust valves stand open at the end of the exhaust stroke and the beginning of the intake stroke so air from the blowers can sweep through the top cylinder space, purge it of spent gases, cool the pistons, valves and cylinders and remainder of the intake stroke.

Both blowers deliver into a common air intake manifold. Blower speed remains proportional to fuel consumed for self regulation at all speed and loads. Compression ratio in the engine is 6 to 1 resulting in a compression pressure of 225 lb. and a firing pressure of 600 lb. at 2,000 rated hp. Fuel rate is 7,600 btu. per hp.

If you write maker identify as **IEN - 873**

RECORDING . . Oscillograph makes and photographs six traces

Source: CONSOLIDATED ENGINEERING CORP.
302 N. Sierra Madre Villa, Pasadena 15, Calif.

Bulletin CEC1533

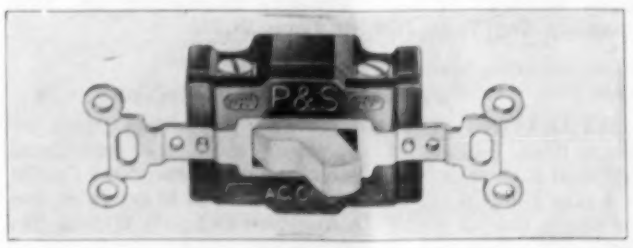
Measurements involving strain, pressure, acceleration, position, vibration, torque are converted to electric signals for recording by this new Type 5-117 oscillograph. Six active data channels are recorded simultaneously and also photographed in the frequency range to 300 cps. Sensitive galvanometers are employed in the recording circuits. They can be driven directly by very small electrical signals.

Change gears provide for six record speeds between ¾ and 24 in. per second. One static reference trace provides a base for record reading. Timing lines are recorded every 0.01 sec. along one edge of the record with every tenth line emphasized. A counter is advanced at the beginning of each record and is photographed with the record. An unexposed footage indicator shows the remaining length of 70 mm. film in the 100 ft. roll. Operation is on 110-volt 60-cycle ac. Dimensions are about 14 by 5 by 8½ inches. Weight is 24 pounds.

If you write maker identify as **IEN - 874**

SWITCH . . Quiet toggle design for use in 15 and 20 amp. ac. circuits

Source: PASS & SEYMOUR INC.
1307 Milton Ave., Dept. IEN, Syracuse 9, N. Y.



General purpose ac.

Quiet operation characterizes the action of this new general purpose ac. toggle switch. It has been designed to comply with the requirements of the new Underwriters' Laboratories Standard for use in ac circuits only. Under this standard, it is suited for use to full rated capacity at 277 volts on fluorescent or incandescent loads and to control motors to 277 volts at 80 per cent of the current rating. Both the 15-amp. and 20-amp. sizes are made in single-pole, double-pole and three-way types with brown and ivory handles.

Construction includes a plastic housing, conventional terminals, dimensions that permit application in a standard wall box with a standard cover plate. The switch mechanism is completely enclosed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 875**

At left: Jacketed 3-Way Plug Cock.

Below: Cutaway section of Jacketed Cock, showing packing gland construction.

H&B ESTABLISHED 1887

Jacketed Pipe, Pumps, Valves and Fittings . . .

Regardless of whether the material is being heated or cooled in the processing, and what heating or cooling medium is being used, H & B jacketed fittings are available for all applications. Steam, hot water or hot oil may be used for heating, cold water or brine for cooling.

H & B can save you money on your jacketed pipe and fitting requirements because we buy all standard size pipe from the mill in carload lots, make our own special flanges in quantities, and are tooled up for making jacketed equipment at lowest possible price. Write for Bulletin J-50.

Hetherington & Berner Inc.
725 Kentucky Avenue • Indianapolis 7, Indiana

If you write maker identify as **IEN - 876**

. . . . WHAT'S NEW AT BRISTOL . . . .

Meet the world's simplest instrument system!

TRUE PLUG-IN SERVICE — results in great savings in installation costs; units can be plugged in or out without stopping process or control.

It's Bristol's new METAGRAPHIC pneumatic transmission instrument system for measuring, indicating, recording and controlling pressure, temperature, vacuum, flow, differential pressure and liquid level.

Here are the big advantages:

SIMPLICITY — fewer parts, fewer adjustments, and less service required. Ranges can be changed in seconds.

FLEXIBILITY — units can be combined like building blocks to make any kind of arrangement.

Get the whole METAGRAPHIC story by writing to The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

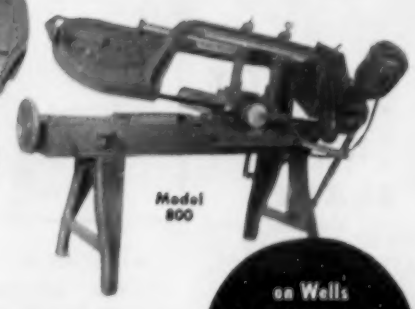
BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as **IEN - 877**

NOW Wells offers you fool-proof blade tensioning . . .

Above is a close-up of the new Wells blade tensioning device.



Model 800

on Wells No. 5, No. 8, No. 12 and Model 800 cut-off saws

NOW IT IS POSSIBLE to maintain a constant blade tension on Wells cut-off saws. You can replace or change the blade any number of times, yet quickly and easily duplicate the correct blade tension. The new device is standard equipment on the models listed above. Simply turn the tension hand wheel until the fixed and moving indices coincide. At this point the blade tension is correct regardless of variation in blade length.

Wells

Products by Wells are Practical

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE R'''ERS, MICH.

If you write maker identify as IEN - 878

WHAT'S THE FASTEST WAY TO CLEAN METAL? See page 11

WHAT'S THE MOST ECONOMICAL WAY? See page 9

Oakite's FREE Booklet

"Some good things to know about Metal Cleaning"

answers many questions that mean better production, more profit for you. Just look at the table of contents:

- Tank cleaning methods
- Machine cleaning methods
- Electrocleaning steel
- Electrocleaning nonferrous metals
- Pickling, deoxidizing, bright dipping
- Pre-paint treatment in machines, in tanks and by hand
- Zinc phosphate coating
- Paint-stripping
- Steam-detergent cleaning
- Burnishing, barrel cleaning
- Better cleaning in hard-water areas
- Treating water in paint spray booths
- Rust prevention
- Machining and grinding

FREE For this 44-page illustrated booklet, write Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

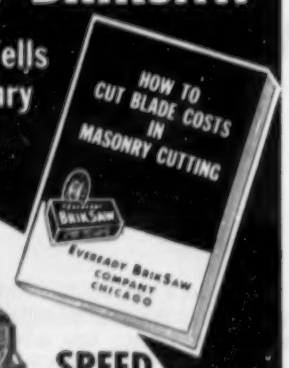
SPECIALIZED INDUSTRIAL CLEANING OAKITE MATERIALS · METHODS · SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 879

Get More Heats Per Lining with EVEREADY BRIKSAW

This FREE BOOK Tells How to Cut Any Masonry Material in SECONDS!



WET (DUSTLESS) OR DRY CUTTING

SPEED REPAIR WORK

Get that FURNACE—KILN—OR BOILER back in operation fast! Cut any Fire Brick in seconds with a BRIKSAW . . . and "BRIKSAW CUT" Reline Jobs last longer — give more heats.

EXCLUSIVE BRIKSAW FEATURES—

"Adjusta-Height" lets cutting head change elevation for materials of varying thickness . . . adjusts in 4 seconds.

Swing the cutting head to any desired position with this "Toe-Matic" foot treadle. Fast shift from one type of masonry material to another.

Automatic pressure control for the blade. Adjusts cutting pressure to hardness or softness of material.

One-piece cutting head for immediate, easy portability. Off the saw frame in 21 seconds flat!

EVEREADY • ABRASIVE • DIAMOND • "TUFFIE" BLADES

Your local Distributor carries EVEREADY Blades to best cut any masonry or fire brick material . . . for every make and model Masonry Saw. Order your EVEREADY Blades from local stocks.

WRITE FOR NAME OF NEAREST DEALER

CUT Special Shapes— SKEWS—SPLITS—ANGLES from Standard Shapes

Any shape, any size . . . cut in SECONDS from Standard Refractory stocks or from cuts you formerly discarded. Cut to precision sizes . . . do a better, faster job of relining. Save Material . . . Save Time . . . Save Money!

There's an EVEREADY DISTRIBUTOR IN YOUR LOCALITY Write for His Name Now!

EVEREADY BRIKSAW COMPANY
1509A S. Michigan Blvd., Chicago 5, Ill.

Send without obligation of any kind FREE Booklet on "HOW TO CUT BLADE COSTS IN MASONRY CUTTING"

NAME _____

ADDRESS _____

CITY _____ STATE _____

No. EI-13

NEW LITERATURE—Continued

If you write maker identify as IEN - 069

PRINTING . . Paper, cloth, film materials for duplicate reproduction of drawings, records, papers are the subject of 24-page Bulletin F-1-36. Examples of what can be done are illustrated and summarized in a chart. Eastman Kodak Co., 343 State St., Dept. IEN, Rochester 4, N. Y.

If you write maker identify as IEN - 070

PROCESSING . . Noxious gases, corrosive fumes, or irritating dusts can be removed from plant or laboratory air by new compact Cyclonaire saddle-packed tower. Two sizes handle 750 and 1,650 cfm. Performance charts in 4-page Bulletin FW-3. U. S. Stoneware Co., Box 350, Dept. IEN, Akron 9, Ohio

If you write maker identify as IEN - 071

PROTECTING . . 64-page Catalog 27 on head and eye protective equipment covers goggles, shields, helmets, hoods, respirators. A two-page picture index recommends what to use for 17 types of hazards. Chicago Eye Shield Co., 2300 Warren Blvd., Dept. IEN, Chicago 12, Ill.

If you write maker identify as IEN - 072

PULLING . . Hand-operated hydraulic pulling-pushing tool has two cylinders that bear on a yoke with a center hole. Three sizes rate 17½ to 50 ton. Suggested uses and accessories in 24-page Bulletin HY-1953. Owatonna Tool Co., 371 N. Cedar St., Dept. IEN, Owatonna, Minn.

If you write maker identify as IEN - 073

PUMPS . . Plunger and diaphragm pumps for heavy waste liquids, self-priming centrifugal units for light wastes and clear liquids, in 12-page Bulletin W-52, just released. Marlow Pumps, P. O. Box 566-A, Ridgewood, N. J.

If you write maker identify as IEN - 074

HYDRAULIC PUMPS . . Dual sliding-vane design of the Dudco is described on 3 to 120-gpm. models in 8-page Bulletin DP-300. Dudco Div., New York Air Brake Co., 1700 E. 9-Mile Rd., Dept. IEN, Hazel Park, Mich.

If you write maker identify as IEN - 075

HYDRAULIC PUMPS . . Variable-delivery, constant-delivery, duplex, feed pumps, together with hydraulic motors, power cylinders, valve and accessories, are described as an integrated line by 12-page Bulletin 10051-C. Oilgear Co., 1567-A West Pierce St., Dept. IEN, Milwaukee 4, Wis.

If you write maker identify as IEN - 076

REFRACTORIES . . Monolithic lining for cupolas, ladles, furnaces, ovens is produced by spraying refractory material in Bondact equipment. "Bondact Process", 8 pages. Eastern Clay Products, 20 N. Wacker Drive, Dept. IEN, Chicago 6, Ill.

If you write maker identify as IEN - 077

RELAYS . . Silicone liquid is sealed into a tube to form the time-delay element in the Silic-O-Netic 5-amp. 120-volt ac. relay. Short-circuit response is instantaneous. Response curve in 4-page Bulletin 5101-A. Heinemann Electric Co., 313 Plum St., Dept. IEN, Trenton 2, N. J.

If you write maker identify as IEN - 078

MACHINE ROLLS . . Made of wood in standard diameters from 3½ to 5½ in. and in a number of split-resistant end constructions. Special sizes are 1½ to 16 in. in diameter and lengths to 11 feet. Bulletin, "Wooden Rolls," 4 pages. Cylinder Mfg. Corp., Dept. IEN, Hawthorne, N. J.

If you write maker identify as IEN - 079

SEALING . . Some 50 sealing materials for refrigerator and low-temperature service include mastics, tape, beads, barrier paper, glazing compounds, odorless sealants. "Refrigerator Sealers," 34 pages. Presstite Engineering Co., 3798 Chouteau Ave., Dept. IEN, St. Louis 10, Mo.

If you write maker identify as IEN - 080

SEPARATING . . Deflecting vanes in the Hi-eF unit for steam lines, compressed air, vapor, produce a centrifugal action to remove entrained moisture, dirt, scale. Two graphs in 4-page Bulletin 201 are intended to assist in selection, one for steam, one for air. V. D. Anderson Co., 1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as IEN - 081

SEPARATING . . Steam, air, gas separators; float and bucket traps; strainers; water gages and accessories are summarized in 12-page Catalog 400, letterhead request please. Wright-Austin Co., 3243-47 Wight St., Detroit 7, Mich.

If you write maker identify as IEN - 082

MAGNETIC SEPARATOR . . Plate-type permanent-magnet separator to remove tramp iron from wet or dry solids is enclosed in a welded aluminum housing. Application suggestions in 6-page Bulletin 230. Columbia Engineering Service Co., 4027-35 Sebastopol Highway, Santa Rosa, Calif.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 881

GREASE COMES THROUGH SO FAST IT POPS!

Here's a new way to pack bearings from the original grease container: NEW GRACO PRESTO-PAK

PRESTO-PAK action is so fast and powerful that the bearing is actually *pressure cleaned* as well as thoroughly packed! After seating and locking the bearing in the spout receiver, just give a few quick lifts to the pump handle, and . . . PRESTO! A large volume of grease from the original container literally POPS into the bearing, leaving no air pockets. Bearing and ring surfaces are free of dirt and grime.

The PRESTO-PAK handles all bearings from ¾" ID to 7½" OD (small end). Hinged cover also protects receiver parts against dust when not in use. PRESTO-PAK is available in two models . . . for 25 lb. pails and 100 lb. drums. Write for new catalog sheet.

New Catalog Sheet Available

Write for your personal copy of the new PRESTO-PAK illustrated catalog sheet which shows in detail how this unit works. See how it will fit your own operation!

GRAY COMPANY, INC.
ENGINEERS & MANUFACTURERS
11 Graco Square, Minneapolis 13, Minn.

Regional Offices: New York • Philadelphia Detroit • Atlanta • Chicago • San Francisco

If you write maker identify as IEN - 882

Grammes NAME AND INSTRUCTION PLATES

RCA

. . . they give you a 3-way advantage!

. . . Quality that enhances the value of your product!

. . . Economy through lowest cost per good impression!

. . . Service that helps you meet production schedules!

PROMPT DESIGN HELP—Your rough sketch or blueprint will bring helpful recommendations and prices. Write for new booklet, "Tips on Name Plate Selection and Design."

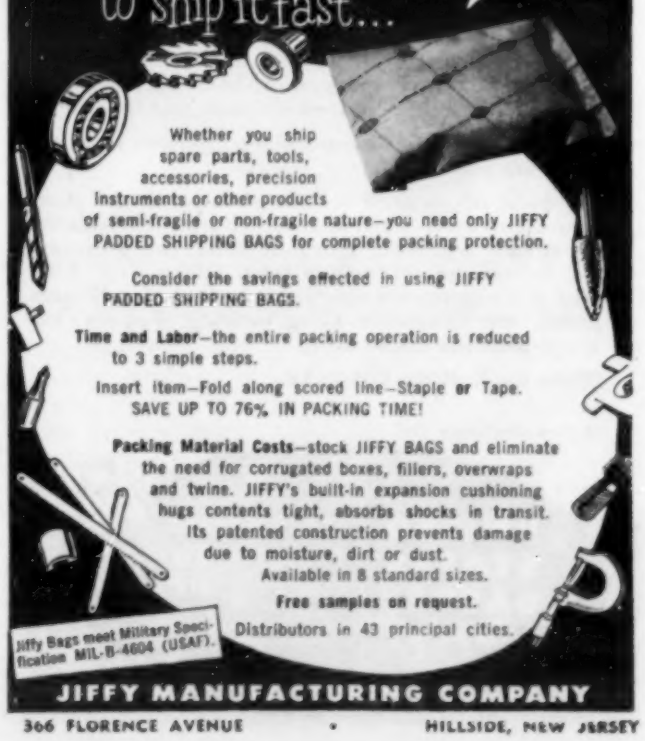
METAL STAMPINGS · NAME PLATES DIALS · ADVERTISING SPECIALTIES · TRIMS • BEZELS PANELS

L. F. GRAMMES & SONS INCORPORATED ALLENTOWN, PA.

SPECIALISTS IN DECORATIVE METAL

If you write maker identify as IEN - 883

It takes only a Jiffy to pack it right . . . to ship it fast . . .



Whether you ship spare parts, tools, accessories, precision instruments or other products of semi-fragile or non-fragile nature—you need only JIFFY PADDED SHIPPING BAGS for complete packing protection.

Consider the savings effected in using JIFFY PADDED SHIPPING BAGS.

Time and Labor—the entire packing operation is reduced to 3 simple steps.

Insert item—Fold along scored line—Staple or Tape. SAVE UP TO 76% IN PACKING TIME!

Packing Material Costs—stock JIFFY BAGS and eliminate the need for corrugated boxes, fillers, overwraps and twine. JIFFY's built-in expansion cushioning hugs contents tight, absorbs shocks in transit. Its patented construction prevents damage due to moisture, dirt or dust. Available in 8 standard sizes.

Free samples on request.

Distributors in 43 principal cities.

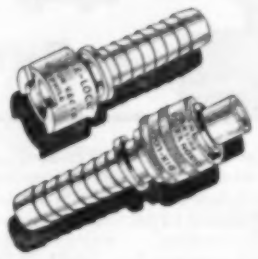
Jiffy Bags meet Military Specification MIL-B-4604 (USAF).

JIFFY MANUFACTURING COMPANY
366 FLORENCE AVENUE • HILLSIDE, NEW JERSEY

If you write maker identify as IEN - 884

"DIX-LOCK"

Quick-Acting, Streamlined AIR HOSE COUPLING



A modern, efficient coupling for all factory and field air lines up to ¾". Made of rustproof steel or bronze. Light weight, yet strong and durable. Snap-lock action . . . quarter turn against spring tension; reverse quarter turn to unlock. Hose ends; male and female I. P. T. ends. Completely interchangeable.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.

PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 885

A NEW TERMINATION TECHNIQUE FOR . . .

- COMPUTERS
- SWITCHBOARDS AND INSIDE PLANT EQUIPMENT
- RELAYS, SWITCHES, AND MULTI-CIRCUIT COMPONENTS

If you are concerned with the wiring of close spaced equipment, investigate the new AMP Solderless TAPER TAB RECEPTACLE for flat relay or switch tabs shown at right. It is self locking when installed on a male tab with matching 3½° taper, yet can be removed and reconnected any number of times without solder or special tools. These terminals are supplied on reels in continuous strip. Customer crimps them on wires using AMP automatic machines at speeds up to 4,000 per hour!

Performance of these miniature connectors meets exacting requirements for millivolt drop, corrosion resistance, and vibration. They are suited for critical low level circuits or power circuits up to several amperes.

Write to AMP Electronics Division for complete information concerning AMP TAPER TAB RECEPTACLES . . . you will receive data and samples by return mail.

© AMP AMP Trade-Mark Reg. U. S. Pat. Off.

AMP

AIRCRAFT-MARINE PRODUCTS, INC.
2100 Paxton Street, Harrisburg, Pa.
Aircraft-Marine Products of Canada, Ltd.
1764 Avenue Rd., Toronto 12, Ontario, Canada

If you write maker identify as IEN - 887

MIXING . . Multiple assembly of gallon containers and motor drive

Source: WORDEN SPECIALTY & MACHINE CO.
14980 Northville Road, Plymouth, Mich.

Mixes and blends

Illustrated is the 14-container assembly in the company's line of mixing equipment particularly for paints. The line includes a single-shelf unit for seven containers and one with three shelves for 21 containers. Each container station takes a standard round paint can under a clamp-on with a pour opening and a gear equipped stirring shaft and blade. The gear engages a gear on the horizontal shaft above each shelf. The shaft connects to a motor at one end. The motor, one for each shelf, is supplied by the user. It rates ¼ hp. in recommended size. Overall dimensions of the 14-can assembly are 60 by 10 by 30 inches.

If you write maker identify as IEN - 888

CONSTRUCTION . . Liquid compounds to promote curing and etch concrete

Source: SEC MFG. CO.
61 N. E. 26th St., Dept. IEN, Miami, Fla.

Technical data upon request

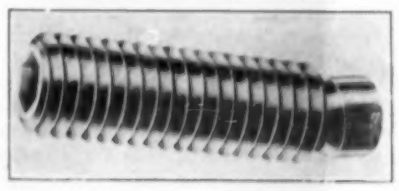
Con-Cure is a new liquid sealing compound for application on green concrete as soon as excess water has disappeared from the surface after finishing. The liquid dries to a pliable seal coat to prevent excessive moisture evaporation and so assist in complete curing of the concrete. It also will keep plaster droppings from sticking to a floor and can be used as form lubricant.

Krete-Etch, the second of the two new liquids, opens the pores in concrete in preparation for painting. It neutralizes the cement and assists in cleaning mortar stains from tile and brick surfaces.

If you write maker identify as IEN - 889

CLAMP . . Self-aligning screw to hold work in jigs and fixtures

Source: VLIER ENGINEERING CO.
4552 Beverly Blvd., Dept. IEN, Los Angeles 4, Calif.



Known as the "Screw-Ball"

The pressure end of this new screw terminates in a ball on which a steel pad is mounted for free angular movement. The screw is tightened by using a socket wrench in the opposite end. The pad conforms to work surface irregularities, prevents damage to the work when the screw is not at 90 deg. with the clamped surface. The unit is available in specified sizes.

If you write maker identify as IEN - 890

TRUCK . . Double telescopic mast for limited head room and high lift

Source: TOWMOTOR CORPORATION
1224-28 E. 152nd St., Cleveland 10, Ohio

Bulletin AD-15

New mast assembly employing two frames, each with a hydraulic cylinder, applies on certain of the company's regular fork lift trucks. The new design combines ability to clear low head room areas like railroad cars and highway trailers, to stack in these low ceiling areas and also to stack in very high storages. A typical assembly has a lowered height of 6 ft. and a total lift height of 14 feet.

Highest lift is to 18 ft. with maximum height of the uprights at 19½ feet. In this case, lowered height is 7 ft. and load capacity is 1,500 lb. on 24 in. centers. The assembly consists of a primary mast nearest to the operator and a secondary mast which carries the carriage and forks. The action of each is independently controlled by hydraulic valves at the operator's position. The secondary mast is used alone for low headroom stacking. Both are employed to reach maximum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

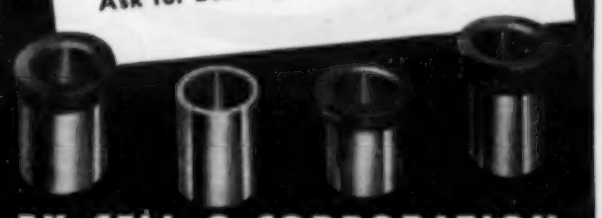
If you write maker identify as IEN - 891

XLO

Ex-Cell-O Drill Jig Bushings Have All These Features . . .

- Selected premium grade tool steel.
- Precision ground inside and out and under the head.
- Concentricity assured by grinding on arbors after the holes are finished.
- Hardened to 62-64 Rockwell "C."
- Uniformity of material, dimensions, finish, and hardness.
- Prompt delivery from stocks of standard sizes in Detroit, New York, Los Angeles, and Toronto.
- Largest bushing users in the country are Ex-Cell-O customers.

Ask for Bushing Catalog No. 35936.

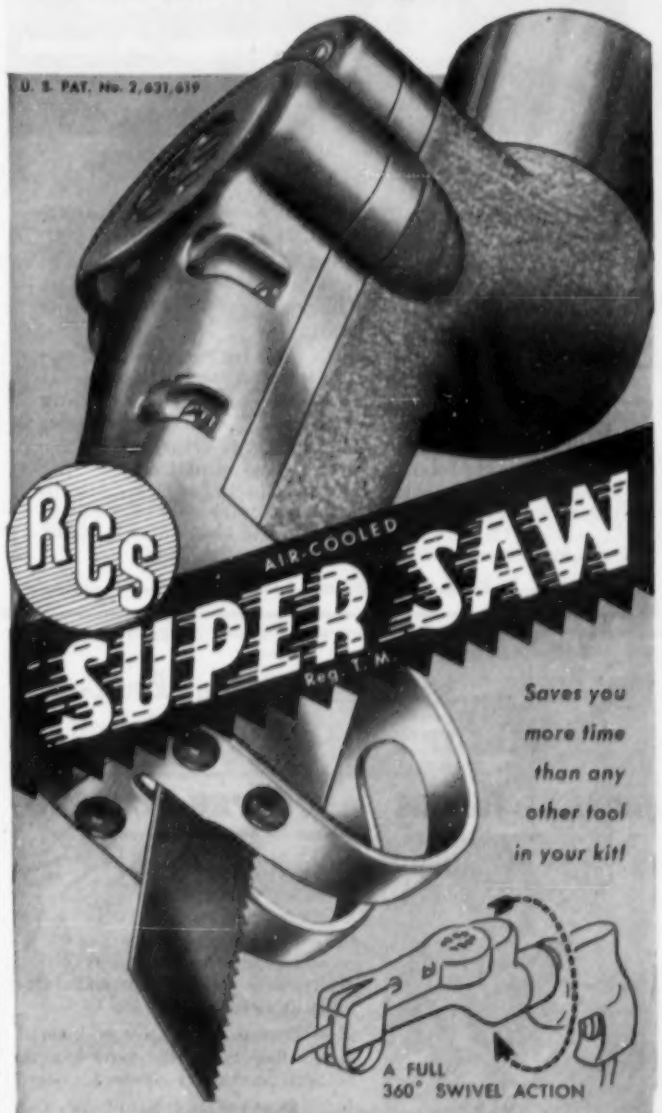


EX-CELL-O CORPORATION
53-17 DETROIT 32, MICHIGAN

If you write maker identify as IEN - 892

CONTRACTORS, MAINTENANCE MEN

Here is the saw designed for you!



A "lifetime" tool with built-in blower, ball and roller bearings, sealed lubrication, etc. Safe—(two-handed operation required). 360° swivel action for maximum versatility. Blades to cut everything including stainless steel. Fits your present ⅛" heavy-duty drill.

RCS TOOL SALES CORPORATION
JOLIET, ILLINOIS

Gentlemen:
Please send us Bulletin H-1 and the name of the nearest Super-Saw distributor.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 894

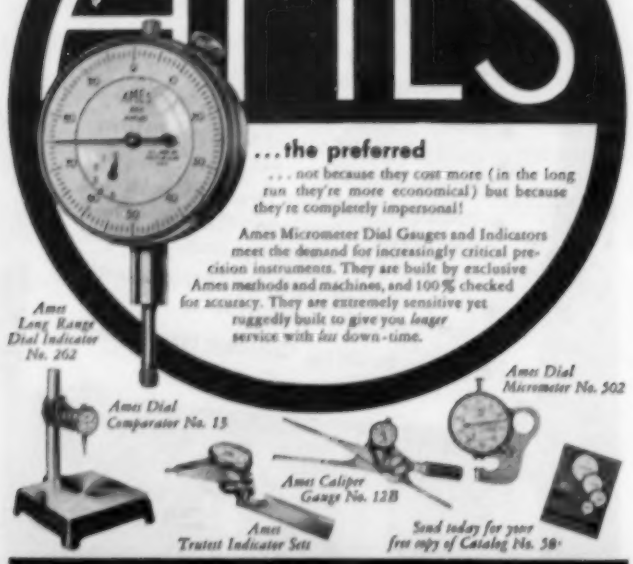
THEY HAVEN'T A FRIEND IN THE WORLD!

AMES

...the preferred

... not because they cost more (in the long run they're more economical) but because they're completely impersonal!

Ames Micrometer Dial Gauges and Indicators meet the demand for increasingly critical precision instruments. They are built by exclusive Ames methods and machines, and 100% checked for accuracy. They are extremely sensitive yet ruggedly built to give you *longer* service with *less* down-time.



Send today for your free copy of Catalog No. 58

Representatives in principal cities. B. C. AMES CO. 33 Ames Street Waltham 54, Mass.

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 895

Here are *some* of the reasons this new heavy duty model offers you more per truck dollar invested:

LOW OPERATING COSTS—electric power costs only pennies per day. No fumes. No vulnerable clutch.

EASIER MAINTENANCE—all parts instantly accessible for faster lubrication or inspection.

COMPACT—97" overall length (less forks). 83" high uprights provide 110" lift on standard model.

EASY STEERING due to articulating caster-type trailing axle. 61" wheelbase. Turns in 83" intersecting aisles with 42" forks.

SEND FOR FULL DATA on this newest model of E-P "Air Rights" Fork Trucks. This line includes 8 models in increments of 1000 lbs. between 2000 and 10,000 lbs. capacity. The Elwell-Parker Electric Co., 4060 St. Clair Avenue, Cleveland 3, Ohio.

If you write maker identify as IEN - 896

THIS... non-slip flooring
PLUS THIS low budget price

ADDS UP TO THIS A.W. SUPER-DIAMOND

Pattern ½ actual size

When you want real foot safety at an economical price, install *A. W. Super-Diamond*. No other flooring offers such safety, easy maintenance and durability at so low a cost.

Super-Diamond's exclusive engineered raised-diamond pattern puts 40 anti-skid traction points in every footstep.

Super-Diamond takes hard blows and heavy loads—resists fire, heat and most chemicals. And it cuts maintenance costs because it's so easy to clean with hose, mop or broom—has no cracks or corners to collect dirt. Send coupon today for a free copy of our newest booklet on foot safety *and* economy with *Super-Diamond*.

A.W. SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send your new, free booklet SD-3 on Super-Diamond for safety.

Name_____
Company_____
Address_____
City_____ Zone____ State____

NEW LITERATURE—Concluded

If you write maker identify as IEN - 083

SEWING . . Two new drive units for the company's industrial sewing machines have forced-circulation air cooling around motor and clutch with delivery away from the operator. Folder 1253-MT, 8 pages. Singer Sewing Machine Co., 149 Broadway, Dept. IEN, New York 6, N. Y.

If you write maker identify as IEN - 084

SIGNALING . . Industrial television enables you to observe directly from a central point such conditions as furnace combustion, water level, smoke density. Equipment is shown in 8-page Bulletin 2J-8837. Radio Corp. of America, 1941 Front & Cooper Sts., Dept. IEN, Camden 2, N. J.

If you write maker identify as IEN - 085

SPRAY NOZZLES . . 48-page Catalog 24 indexes its spray nozzles by the type of pattern produced: hollow cone, full cone, square, flat, straight stream, air atomizing. It also covers fittings, accessories, capacities, sizes. Spraying Systems Co., 3208 Randolph St., Bellwood, Ill.

If you write maker identify as IEN - 086

GAS TESTING . . Oxygen analyzer and recorder for process control is based on paramagnetic susceptibility. Bulletin ND-46-91(3), 8 pages. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.

If you write maker identify as IEN - 087

THREADING . . Tap sizes, thread forms and list prices on hand and machine taps for steel and tough materials, cast iron, aluminum, zinc die castings, brass, plastics. Bulletin ST-53, 32 pages. Detroit Tap & Tool Co., 8615 E. 8-Mile Road, Dept. IEN, Base Line, Mich.

If you write maker identify as IEN - 088

TIMING . . Minerva stopwatches have a non-breakable coil-spring construction which is shown in 12-page Catalog 153. The catalog also describes standard and special models such as decimal-scale units for motion study. M. Ducommun Co., 580 Fifth Ave., Dept. IEN, New York 36, N. Y.

If you write maker identify as IEN - 089

SAFETY TOOLS . . Non-sparking property of beryllium copper is utilized in hammers, chisels, wrenches, pliers, and other tools. Folder, "$64,000 Question", 4 pages. Beryllium Corp., 953 Tuckerton Road, Reading, Pa.

If you write maker identify as IEN - 090

TRANSFORMERS . . Variable autotransformer comes in ratings from .34 to 16.8 kva., input of 110 to 460 volts, single and ganged. "Adjust-A-Volt," 18 pages. Standard Electrical Products Co., 2240 E. 3rd St., Dept. IEN, Dayton 3, Ohio

If you write maker identify as IEN - 091

HAND TRUCKS . . 25 models for dairy and produce-plant use have been grouped with illustrated specifications in 8-page Bulletin 54-DJ. Nutting Truck & Caster Co., 1125 W. Division St., Dept. IEN, Faribault, Minn.

If you write maker identify as IEN - 092

LIFT TRUCK . . Tiering, tilting, telescoping action of Model F-31T electric lift truck suits it for a variety of service to its 6,000-lb. rating. Bulletin B-148, 4 pages, gives a turn radius diagram. Elwell-Parker Electric Co., 4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

If you write maker identify as IEN - 093

TUBES . . Made in stainless steel, nickel and nickel alloys in sizes from .008 to 1 in. o. d. Comparative properties and examples of shapes are in 8-page bulletin. J. Bishop & Co., 126-30 Channing Ave., Dept. IEN, Malvern, Pa.

If you write maker identify as IEN - 094

OPERATING VALVE . . Solenoid pilot-operated control valve for pneumatic and hydraulic applications from 35 to 150 lb., three and four way, ¼ to 1 in. pipe connections. Engineering features in 8-page Bulletin SK-53. Valvair Corp., 454 Morgan Ave., Dept. IEN, Akron 11, Ohio

If you write maker identify as IEN - 095

WASH ROOMS . . Liquid and lather soap dispensers, soap valves for multiple dispensers, tanks, fittings. Details on the Watrous line in 16-page Catalog 471. Imperial Brass Mfg. Co., 1202 W. Harrison St., Dept. IEN, Chicago 7, Ill.

If you write maker identify as IEN - 096

WOOD WORKING . . Pocket Catalog 201 has 48 pages of information on 52 portable electric tools such as saws, drills, planes, sanders, grinders along with accessories and supplies, conversion attachments. Porter-Cable Machine Co., 32 Exchange St., Dept. IEN, Syracuse 8, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 897

new

44 Ways Better

A great new line of Toledos! *44 new features* are now added to the traditional accuracy and dependability of Toledo Scales. Complete range of types and capacities. Get your scale information up-to-date . . . write today for the new condensed catalog No. 2001. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO®
HEADQUARTERS FOR SCALES

Model 2181 —New version of the world's most widely used portable dial scale.

If you write maker identify as IEN - 898

The New GRAND SHOP CADDY

WITH

New 4 Speed VARILIFT

One Man Lifts 500 lbs. 54 Inches High! • Light Weight • Compact • Easy Handling Perfect Balance

Lifts, Moves and Stacks Kegs, Boxes, Dies, Tools, Motors Coils, Bags, Tote Pans.

A 4-speed hydraulic lift assembled into a heavy duty hand truck, forms industry's most versatile material handling tool.

The Shop Caddy takes the heavy work out of loading trucks, storing parts on shelves and bins, stacking boxes, kegs and tote pans, moving and lifting dies into position and hundreds of other similar jobs.

Call us today for a Free Trial in Your Plant

Standard Shop Caddy

Model	Lifting Height	Platform Size	Capacity
4036	36 in.	20" W. x 16" L.	500 lbs.
4054	54 in.	20" W. x 19" L.	500 lbs.

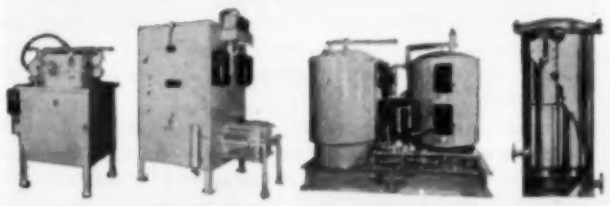
Platform descends to floor level for easy loading. 8 inch Molden Rubber Wheels and Varilift 4-speed system are standard equipment.

ALLIED MFG. & SALES CO.
201 N. WELLS ST., CHICAGO 6, ILL.
MATERIALS HANDLING DIV. OF GRAND SPECIALTIES CO.

If you write maker identify as IEN - 899

HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT

Saves You MONEY, OIL and MACHINERY



OIL RECLAIMER PURIFIER, RE-REFINER HIGH CAPACITY RECLAIMER FILTER

A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL.

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated—must be discarded or conditioned for further use.

There is a HILCO to do This Job for You
Cleans Oil, Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and Recommendations.

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THE HILLIARD CORPORATION
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990 Bay St., Toronto, 3464 Park Ave., Montreal

If you write maker identify as IEN - 900

Make light, safe work of lifting engines and machinery, loading and unloading trucks, raising vehicles, and many other heavy jobs.

Manzel Floor Cranes are available in one to two ton capacities. Four point suspension prevents tipping. Sturdy combination handle provides accurate steering and smooth, fast pumping. This fast, versatile, and relatively inexpensive equipment for heavy lifting and moving will quickly pay for itself. Write today for complete information.

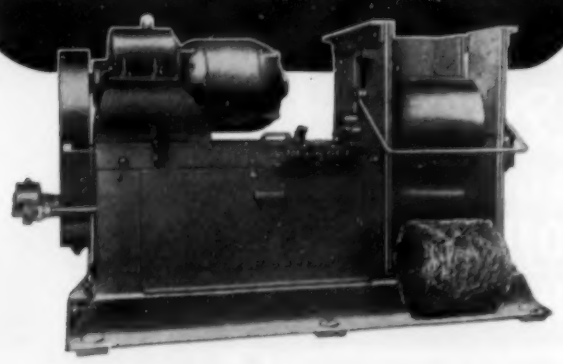
Manzel
DIVISION OF FRONTIER INDUSTRIES, INC.
242 BABCOCK STREET, BUFFALO 10, N. Y.

If you write maker identify as IEN - 901

NOW! Bundle Scrap into 18" and 24" Diameter Bundles

EASY TO HANDLE, SHIP, REMELT OR STORE . . . with the

McLanahan SCRAP BUNDLER



Designed for efficient bundling of scrap wire and strip metals, anything of a stringy nature, the new McLanahan Scrap Bundler "wraps" scrap into compact cylinders for easy handling. Fast and economical in operation, this new machine is the answer to your scrap bundling problems.

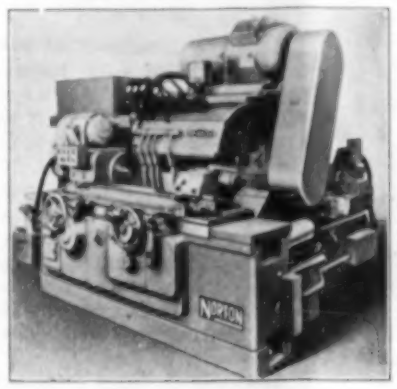
Write for new "Scrap Bundler" Bulletin Today!

McLANAHAN and STONE Corp.
Hollidaysburg, Pa. SINCE 1835

If you write maker identify as IEN - 903

GRINDING . . Multi-wheel machine plunge grinds several diameters

Source: NORTON COMPANY
36 New Bond St., Worcester 6, Mass.



Shown with 4 wheels

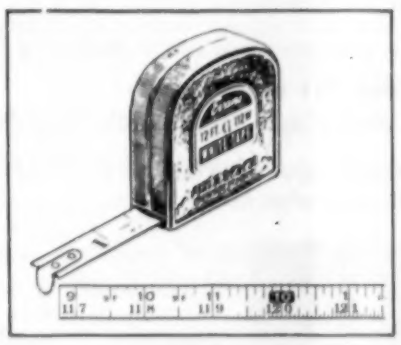
Type CM-1 is a new heavy duty production line machine for work having several diameters such as transmission and motor shafts, line bearings, crank and camshafts. Automatic actions of the grinding cycle include work and coolant control, rapid wheel head advance, grinding feed, dwell and rapid return. Hydraulically operated wheel truing is provided at the rear of the wheel guard. The truing action can be tied in with the grinding cycle or initiated by the operator. The truing operation itself is automatic.

Multiple wheels, to 36 in. in diameter, are carried on the 12-in. spindle body between cartridge bearings in a maximum overall span of 30 in. including the spacing collars. The cartridge bearings permit removal as a unit with the wheels and spindle so the bearing adjustments are not disturbed. Wheel change is assisted by a mechanical device which swings back the combined wheel guard and the wheel drive motor mount. Hydraulically operated steadyrests can be provided to support the work. Their action is interlocked with the grinding cycle. A built-in swarf remover also is available.

If you write maker identify as IEN - 904

GAGE . . Flexible steel rule carries foot and inch scales to 12 feet

Source: EVANS & COMPANY
410 Trumbull St., Dept. IEN, Elizabeth 1, N. J.



About $2

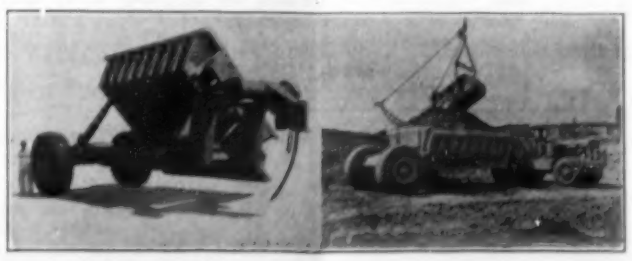
Overall length of this new "white" steel tape is 12 feet. It is carried in a chromium plated case measuring 2 in. from front to back so it and the tape can make internal measurements by adding 2 in. to the tape reading where it enters the housing. Two scales appear on the face of the tape. One is in $\frac{1}{16}$-in. divisions and is marked from 1 to 144 inches. The other is in 8 in. divisions and is marked 12 in. to the foot. Foot markings in the second case appear white on a black island background.

The Tape is ½ in. in width and is made of high carbon steel, tempered and Bonderized. The black markings are printed on a white enameled background. The end is fitted with a hook that recesses for inside measurements and pulls out, when hooked over the edge of an object, to line up the tape end with the edge for exterior measurements.

If you write maker identify as IEN - 905

TRUCK . . Side dump trailer built to work with Caterpillar tractor.

Source: EASTON CAR & CONSTRUCTION CO.
Holly & Liberty Sts., Easton, Pa.



Specifications in Bulletins 8-A7 and 9-A7

Model TD-1832H is a new side dump trailer capable of handling 32-ton loads of earth in connection with a Type-DW20 Caterpillar tractor. It will dump to the side while it is in motion. The dumping action is powered by two outboard mounted hydraulic jacks controlled from the operator's seat. The dump action is to one side only with interchangeable mounting of the body and jacks so this direction can be reversed.

The patented door mechanism operates as the body is raised and lowered. The door becomes flush with the floor at a 20-deg. angle and forms a chute to discharge the load clear of the running gear at maximum dumping angle of 50 degrees.

Construction employs ⅜-in. steel plate with an oak cushion and a ½-in. liner plate to reinforce the floor. Standard equipment includes Bendix-Westinghouse air brakes with relay emergency valve and reservoir.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

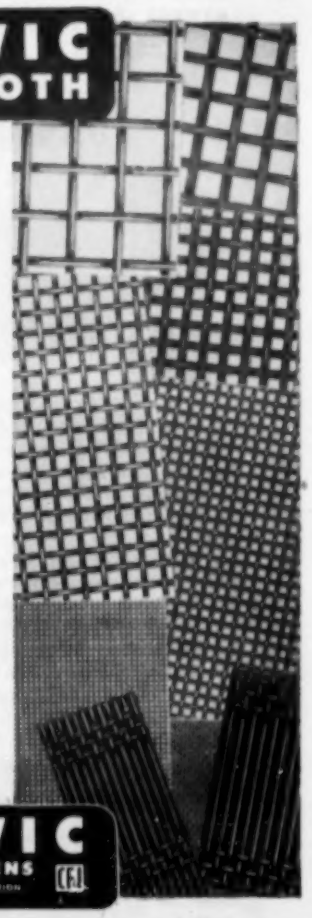
If you write maker identify as IEN - 906

CAL-WIC WIRE CLOTH

meets all special job demands

Whatever your special job demands may be—filtering, screening, grading, cleaning, or any other type of processing — Cal-Wic Wire Cloth is available in the right weave, mesh or weight to give long-lasting dependable service.

To order, write or phone our nearest district sales office.



THE COLORADO FUEL AND IRON CORP.
Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION
Atlanta • Boston • Buffalo • Chicago
Detroit • New Orleans • New York
Philadelphia

CAL-WIC INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

1250

If you write maker identify as IEN - 907

U.S. Royal Cords and Cables

Safety Tested!

Flexibility · Dielectric strength
Smooth finish · Physical toughness

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 908

What tool room men say about the new G BOND wheels

"Now with a G Bond wheel we can go completely around a 16-inch face mill," writes a tool supervisor. "Due to wheel wear we used to index this cutter at four different points."

"Good finish, longer wheel life."
"Heavier feeds without burn."
"Run absolutely true."
"No breakdown — no jagged edges."
"Cut freely, hold shape with no burning."
"They show how a real wheel will cut."

Norton G Bond wheels in your own tool room will bring these same value-adding, money-saving "Touch of Gold" advantages to every job they do. They'll reduce tool spoilage, give you closer tolerances and smoother finishes than you ever got before — with fewer wheel changes and machine adjustments.

See your Norton Distributor for these faster, cooler-cutting wheels in the greatest vitrified bond ever produced. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas, Inc., Worcester 6, Mass. W-1533

NORTON ABRASIVES
Making better products... to make other products better

If you write maker identify as IEN - 909

NEW MINIATURE PRECISION HYDRAULIC VALVE

Skinner's new V10 Series Miniature Hydraulic Valve is an amazingly compact unit, capable of handling pressures up to 1000 P.S.I.

This precision-made valve is ideally fitted for use in the automatic operation of single and double acting hydraulic cylinders, and in pilot control of larger three and four way hydraulic valves.

The V10's construction is consistent with the Skinner quality tradition: most internal parts are of stainless steel; the slide mechanism has a precision-ground piston, and a bore honed to extremely close tolerance, thus minimizing leakage.

Specifications: 1/8" NPT threaded ports; effective orifice diameter of 3/32"; available in the full range of AC and DC voltages.

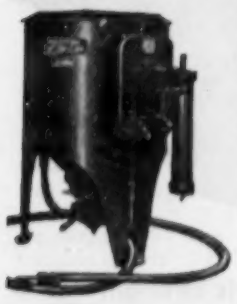
The economical design and unusually small size of the Skinner Miniature Hydraulic V10 valve will enable many manufacturers to install it in places where, heretofore, remote control devices have been considered impractical. *Write for Bulletin #529.*

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 910

Here's how Pangborn Solves these Problems with this modern equipment

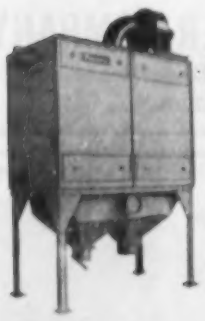
BLAST CLEANING!



Blast Cleaning Cabinet quickly and easily cleans metal parts of rust, grime, dirt, paint, etc. Produces a clean, smooth surface on pieces up to 60" x 36". Models available from $319.00 and up.

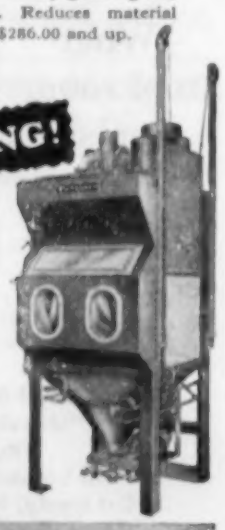
Blast Cleaning Machine not only removes rust, dirt, scale, etc., but is ideal for maintenance and many other uses. Cleans large objects such as bridges, structural work, tanks before painting. Six sizes, portable or stationary, from $188.00 and up.

DUST COLLECTING!



Unit Dust Collector stops dust at its source, minimizes machine wear and tear, reduces housekeeping and general maintenance costs. Solves many grinding and polishing nuisances. Reduces material losses. Models from $286.00 and up.

PRECISION FINISHING!



Hydro-Finish Cabinet uses liquid blast, eliminating dust, and reduces costly hand polishing, cleaning and finishing of molds, dies, tools, etc. Removes scale, discoloration and directional grinding lines, prepares surfaces for plating and coating. Holds tolerances to .0001". Models from $1,410.00 and up.

LOOK TO PANGBORN FOR THE LATEST DEVELOPMENTS IN BLAST CLEANING AND DUST CONTROL EQUIPMENT

Pangborn

MAIL COUPON for full details

(Check for more information)
- ☐ Blast Cleaning Cabinets
- ☐ Blast Cleaning Machines
- ☐ Unit Dust Collectors
- ☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Gentlemen: Please send me more information on the equipment I've checked at the left.

Name .....

Company .....

Address .....

City ..... Zone .... State .....

If you write maker identify as IEN - 912

INDEXING . . Motor driven table mounts 16, 24 or 32 work stations

Source: SWANSON TOOL & MACHINE PRODUCTS INC.
812-16 E. Eighth St., Erie, Pa.

Machine component

Accurate intermittent motion, at 547 to 4,700 indexes per hr. is provided by this new Turret Indexing Unit. It is available in 20, 30 and 40-in. table diameters to mount 16, 24 or 32 work stations. Dwell time is variable, to specification, between 0.5 and 4.9 seconds. Indexing action is by means of a uniform acceleration cam. A locking device assures positive accurate location at each station.

Assembly includes a mounting ring with a circumferential keyway below the table to fasten mounting brackets. The stationary center plate, recessed into the top of the table, provides additional means to mount or support various devices. The enclosed steel base supports the index mechanism and table and encloses the motor drive.

The unit is intended to save individual expense in special machine design and construction by standardizing on the indexing action and purchasing this part of the special design ready for assembly.

If you write maker identify as IEN - 913

HEATING . . Electric element applies in drilled hole in a machine

Source: THERMEL INCORPORATED
3440 W. Lake St., Dept. IEN, Chicago 24, Ill.

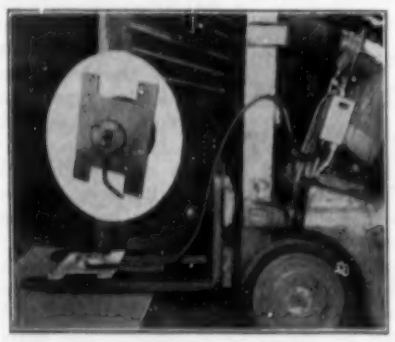
Please note our error

We should have quoted length of the company's new heating element, IEN-9583-53, at 1 in. to 12 ft. instead of 1 to 12 inches. Diameters are correct, at ⅜ to ¾ inches.

If you write maker identify as IEN - 914

MAGNET . . Rides lift truck forks to carry and place steel dock boards

Source: CUTLER-HAMMER INCORPORATED
329 N. 12th St., Milwaukee 1, Wis.



Conserves hand labor

New magnet, 12 in. in diameter, is secured to an H-shaped plate to ride between the forks of a lift truck. Its electric coil connects through a drum switch located on the truck steering column to the 32 or 36-volt battery that operates the truck. It is available also to apply on engine driven trucks, to be operated by the 6-volt generator and battery normally employed on this type of equipment. The magnet will lift steel dock boards weighing 900 pounds. It can be removed from the forks and carried on the rear deck when not in use.

If you write maker identify as IEN - 915

TESTING . . Resistance meter for insulation fests to 2,500 volt dc.

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Chicago 18, Ill.

Vibrotest Bulletin 272

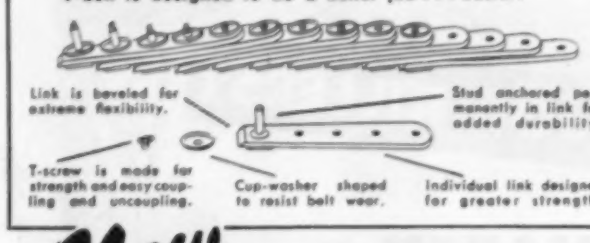
Model 272 is a new instrument, in the Vibrotest line, to check insulation on large rotating machines, power cables, potheads, transformers, circuit breakers, large condensers. It provides nine ranges of resistance values from 0.1 to 50,000 megohms on dc. test potentials of 500, 1,250 and 2,500 volts. The instrument operates on 110-volt 60-cycle ac. It provides an output test voltage in any of the ranges with regulation to 0.1 per cent. Assembly is in a steel case with a removable cover. Dimensions are about 9 by 13 by 10 inches. Weight is 23 pounds.

A switch on the panel provides a "read" position, a "quick charge" position and a "discharge" position. The latter de-energizes the circuit under test through a discharge resistor to protect the operator against capacitive discharge. The assembly includes a transformer-rectifier power supply, a guard circuit to eliminate surface leakage and an electronic amplifying circuit to assure sensitivity.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 916

This detailed line drawing of the new, patented Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job . . . easier!



New VEELOS TD and TE Adjustable V-belt for D and E Drives

It installs in minutes. Links are quickly joined by easy-to-use cup-washers and T-screws to make up individual belts.

It lasts for years. New high-tensile strength link combined with new stud, cup-washer, and T-screw gives added durability.

VEELOS IS KNOWN AS VEELINK OUTSIDE THE UNITED STATES.

VEELOS THE LINK V-BELT

Get the complete story of this new v-belt for D and E drives. Send now for new 8-page illustrated catalog.

MANHEIM MANUFACTURING & BELTING CO.
651 Manbel St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 917

Got a cutting problem . . . *with close register to printing?*

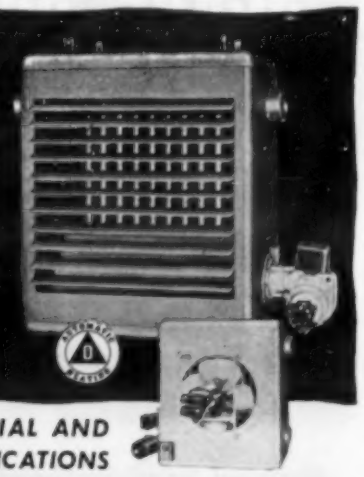
SEND NOW FOR THIS CATALOG.

Cutting candy wrappers may not be your problem but if you want close-register cutting from printed rolls? High production? Sheets counted and stacked, ready for the die cutter? The Beck Automatic Roll Sheet Cutter will give you all these — and more. Because it's factory engineered to your job! Smooth, trouble-free cutting — with ordinary or "difficult" materials. No inaccuracies, no waste, no down time. Savings everywhere — to pay back the modest cost. Send sample of your material — get full details specifically for you!

CHARLES BECK MACHINE CORPORATION
412 N. 13th Street Philadelphia 8, Pa.

If you write maker identify as IEN - 918

FOR HEAT IN A HURRY! Delta's Direct-Fired OIL UNIT HEATER



OVER 52 INDUSTRIAL AND COMMERCIAL APPLICATIONS

- COMPLETELY SELF-CONTAINED — No high-draft permanent chimney needed — no boilers, traps, ducts or pumps.
- TREMENDOUS EFFICIENCY — Output 220,000 BTU/hr. No heat wasted on walls or ceiling — no overheating.
- VERSATILITY — Suspends overhead or mounts on dollies for portable spot heating. Becomes an effective ventilator, humidifier and summer air circulator.
- GREAT ECONOMY — Powerful GUN-TYPE burner uses inexpensive fuel oil. Factory wired and assembled for money-saving installation.

DELTA HEATING CORPORATION
TRENTON 8, NEW JERSEY

WRITE, WIRE, PHONE FOR MORE DETAILS
In Canada - Kresno-Stamm Montreal 24, Quebec

If you write maker identify as IEN - 919

NOW . . . More Speed At Lower Cost

HOBBS Automatic Production Cutter

Electronic measuring and precise controls give you accurate, automatic, low-cost operation!

Easily handles paper, plastic, cloth, etc. up to 60" wide from extruders, laminators, "in-process" operations, or from rolls and sheets. Feeds, controls, measures and cuts soft "in-process" materials to uniform sheet sizes. Process rate is 10 to 100 feet per minute, depending on length of cut. Material can be accurately slit and cut in one operation, with added slitting attachment. Special feeding and take-away devices available for any production set-up. Get the facts on this new machine—estimate your immediate savings. Write *now* for details.

HOBBS MANUFACTURING CO.
40 SALISBURY STREET
EST. 1900
WORCESTER 25, MASS.

Manufacturers of Modern Converting Machinery

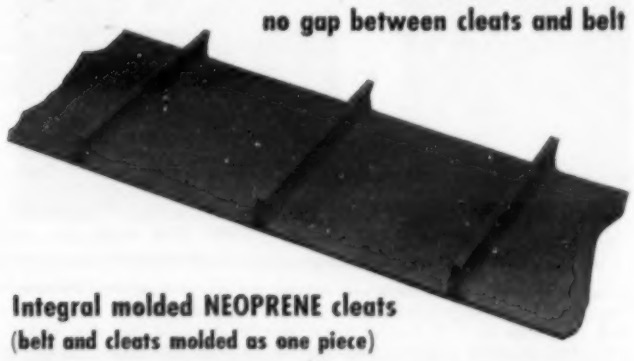
If you write maker identify as IEN - 920

Only Portable Conveyor Belt of its kind

CINCINNATI Cleat Conveyor Belt

Over 2 years of the most rigid tests have proven that the CINCINNATI CLEAT CONVEYOR BELT is positively the most practical and most economical portable conveyor belt . . . takes the place of all bolted-on cleat belts.

No stress or strain . . . no gap between cleats and belt



Integral molded NEOPRENE cleats
(belt and cleats molded as one piece)

Cincinnati Cleat Conveyor Belt installation at Industrial Wire Cloth Products Corp., Wayne, Mich.

- **Eliminates costly shut-down time due to cleat failure.**
- **Eliminates catching of small parts under cleats.**
- **Eliminates deterioration due to oil and grease.**
- **Eliminates cost of attaching cleats or repairing cleats later.**

No other portable conveyor belt has such high abrasive resistance . . . compare and you'll be convinced. Wherever inclined conveyors are used there's a need for Cincinnati Cleat Conveyor Belts.

Send for Sample and Literature

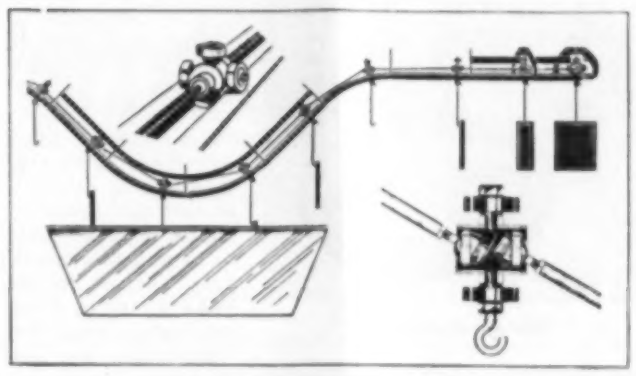
F. B. WRIGHT CO.

1565 Oakman Blvd., Detroit 38, Michigan

If you write maker identify as IEN - 922

CONVEYING . . Load trolleys ride in closed loop with ball end rods

Source: LANDAHL CONVEYOR CO.
534 Dennison Ave., Dept. IEN, Columbus 8, Ohio



Illustrated details in catalog

The ball bearing wheels in the overhead closed circuit conveyor, previously described IEN-4862-53, are now permanently lubricated at the factory with molybdenum disulfide grease. It will not leak out even under conditions of high constant heat. The socket and ring assembly in the carrier is carburized so no lubrication is required at this point. As a result, the conveyor is able to operate without maintenance attention, following initial installation.

Work is suspended from the carriers which ride a track made of standard angle iron. The track can be curved for movement horizontally, in straight runs or on inclines, both up and down, in a closed loop. Two wheels, of the four on each trolley, carry the vertical load. Two additional wheels, on vertical spindles, bear against the track legs and angles placed above the track for horizontal curves. Return for movement downward around a vertical curve, to an upward section, is restrained by angles placed above the horizontal wheels.

Carrier connecting rods are standard at 24 in. in length. Other rods are stocked in 18 and 30-in. lengths. Curve radius is minimum at the pitch distance between the trolleys. Movement is by a motor driven chain assembly that mounts on the track and carries hinged pusher fingers. The conveyor is available in various sizes for loads from 100 lbs. per trolley with a line pull of 750 pounds.

If you write maker identify as IEN - 923

STRIPPING . . Plier type tool removes insulation from wire ends

Source: ROCKFORD WIRE STRIPPER CO.
2321-25 23rd Ave., Rockford, Ill.

About $4

Whiz Wire designates a new insulation stripper with interchangeable cutters for use on 12 to 24-gage solid or stranded wire or on 300-ohm twin lead-in wire. The wire is gripped in one jaw and the knives are brought together to cut through the insulation and remove it when the handles are squeezed. When the tool reaches open position, it locks there so the stripped wire can be removed without crushing it.

Finger pressure on one handle releases the lock so the tool returns to starting position. The cutters are made of hardened steel and are held in place by two screws. They are adjusted against a positive stop. The tool is finished in rust resistant black oxide. Extra blades list at 75 cents per pair.

If you write maker identify as IEN - 924

TESTING . . Flash point apparatus with electrically heated closed cup

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

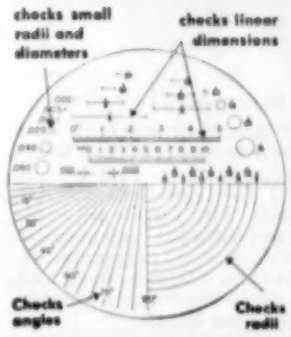
Aluminum housing

Electric heater, rating 150 watts, and a variable power transformer are now available for the Fisher/Tag closed cup flash point tester, previously supplied with gas or alcohol heating units. The new apparatus meets specifications of ASTM D-56 for a heating rate of 1.8 to 2.0 deg F. per minute. It is suited for determination of flash points of mobile liquids, except fuel oils, in closed containers below 175 deg. F.

An inlet for cooling water is provided to lower temperature between determinations and to permit tests of fluids with flash points below that or room temperature. Assembly includes the manually operated device that simultaneously tilts the test flame at the top of the unit and opens the port in the cover of the sample cup.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 925



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only **$36.00** order today

A product of BELL & HOWELL CO. Distributed by

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

Write for FREE descriptive folder

11220 Madison Avenue Cleveland 2, Ohio

If you write maker identify as IEN - 926

ask your tool crib supervisor

Chances are your tool crib foreman will tell you CP Air Impact Wrenches are asked for the most. The CP-360 for example, is designed for fast, low-cost nut running in production line and maintenance. CP Air Impact Wrenches are supplied from ¼ to 1¾ inch bolt size in straight and angle head models with side, pistol grip or straight handles. *Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, N. Y.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 927

Some of the More than 25 POWERS Thermostatic WATER MIXERS in the Milwaukee JOURNAL'S Famous Color Film Processing Laboratory

Perhaps POWERS has the Right answer for your water temperature control problems. Whether you want ½° F. plus or minus control for any type of film processing, camera lens polishing or thermostatic control for jacket water cooling in a 3500 hp diesel engine or a cyclotron—contact POWERS. No other firm has such a complete line of water temperature controls. Bulletin 367 covers control for film processing. (b65)

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

If you write maker identify as IEN-928

Sturtevant

MICRONIZER* GRINDING MACHINE

Reduces Solids to Micron Sizes

The new Sturtevant *Micronizer* grinding machine is a fluid jet grinder especially designed to reduce solid materials to particle sizes in the micron ranges.

Sturtevant *Micronizers* are used for simultaneous dry grinding and classification of solids. The variety of materials that can be processed is large and includes both metallic and non-metallic minerals and ores, metals, pigments, insecticides, fungicides, pharmaceuticals, plastics, dyes and numerous other organic and inorganic products. Available in capacities from ½ to 3000 pounds per hour.

*Micronizer is the Registered Trademark of the Sturtevant Mill Co.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASSACHUSETTS
Designers & Manufacturers of:
DENS AND EXCAVATORS • MIXERS • SCREENS • PULVERIZERS
ELEVATORS • AND COMPLETE FERTILIZER UNITS

If you write maker identify as IEN-929

LOOK JOE!
A NEW CLIPPER
PAYS FOR ITSELF* on a
SINGLE FURNACE or
BOILER RELINE
JOB!

*LININGS LAST LONGER

*JOBS FINISHED FASTER

Clipper

MASONRY SAW

SPECIAL SHAPES
Precision Cut on the Job From Standard Refractory Stocks

Every shape and size refractory **cut in seconds.** Perfect fitting reline jobs that last longer—cost less. And Clipper's Patented Features give you DUSTLESS cutting, instant Portability and complete Flexibility.

Nearly 20 Years Experience Behind GENUINE CLIPPER PRODUCTS

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials and the "know-how" to put them together.

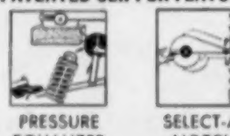
DON'T GAMBLE!
You are GUARANTEED ECONOMY with CLIPPER SUPERIOR BLADES!

. . . all specifications of Abrasive, Diamond and "CBR" (Break-Resistant) Blades guaranteed to "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!"

FREE TRIAL!

Discover how Clipper will increase profits by increasing production at reduced costs. "ON THE JOB" FREE TRIAL guarantees satisfaction at NO OBLIGATION.

PATENTED CLIPPER FEATURES



PRESSURE EQUALIZER
Automatically Cushions Blade for Longer Life.

SELECT-A-NOTCH
Instant Adjustment for Any Size Material.

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

Mr. Clipper

SAVE BY SAWING REPAIR PATCHES and TRENCHES
IN FLOORS—RUNWAYS—STREETS with a CLIPPER "CONSAW"
5 MODELS—
GAS OR ELECTRIC POWERED

Clipper MANUFACTURING CO.

NATION-WIDE DIRECT FACTORY SERVICE

• CINCINNATI • BOSTON • WASHINGTON, D. C. • CHARLOTTE, N. C. • PHILADELPHIA • CLEVELAND • ST. LOUIS • CHICAGO • HOUSTON • AUSTIN, TEXAS • SAN FRANCISCO • ATLANTA • DETROIT • PITTSBURGH • NEW YORK • BIRMINGHAM, ALA. • LOS ANGELES • INDIANAPOLIS • ST. PAUL • MILWAUKEE • DALLAS

IN CANADA — P. O. BOX 476, WINDSOR, ONTARIO

TEAR OUT AND MAIL!

CLIPPER MANUFACTURING CO.
11 E. 28TH ST., KANSAS CITY 8, MO.
Send FREE Literature and Prices on:
☐ CLIPPER MASONRY SAWS ☐ DUSTLESS MODELS ☐ DRY ONLY MODELS
☐ CLIPPER ABRASIVE BLADES ☐ WET ☐ DRY
☐ CLIPPER CONSAWS
☐ CLIPPER DIAMOND BLADES
98 IND.
COMPANY ______
ADDRESS ______
CITY ______ STATE ______

If you write maker identify as IEN-931

SEALING . . Molded ring packing maintains line contact around a shaft

Source: JOHNS-MANVILLE
22 E. 40th St., Dept. IEN, New York 16, N. Y.

For specified duty

Sizes range upward from ⅝ in. in shaft diameter for this new Line-Contact Proportionate Design Clipper Seal. The lip makes line contact around the shaft to minimize seal wear, drag and frictional heat. The narrow lip bearing area also minimizes need for lubrication. The lip and hinge areas hold proportionately the same through the range of flange widths and shaft sizes so sealing characteristics remain constant.

The lip area provides a deep retainer groove for the garter spring that holds the lip in light positive contact with the shaft. The composition heel is designed for press fit in a bearing cavity and makes unnecessary any close tolerance machining of this cavity. Lip and heel are of different compositions, molded together into a single unit.

If you write maker identify as IEN-932

STAPLING . . Foot operated machine drives one or two staples in sheet fold

Source: ACME STAPLE CO.
1643 Haddon Ave., Dept. IEN, Camden 3, N. J.

Replaceable parts

Duplex No. 9 is a new foot operated machine in the company's line of stapling equipment. It is equipped, as shown in the illustration, with a V-shaped table to drive staples through the binding fold of a number of paper sheets. It will staple the sheets to a thickness maximum at ⅜ inch. The machine can be converted for flat or saddle back work. It can employ either fine or heavy wire staples with leg length ranging from ¼ to ½ inch. Crown width is 0.565 inch.

If you write maker identify as IEN-933

SHEARING . . Hydraulic equipment rates aluminum bar stock to 1⅝ in.

Source: MANCO MFG. CO.
Grove & West, Dept. IEN, Bradley, Ill.

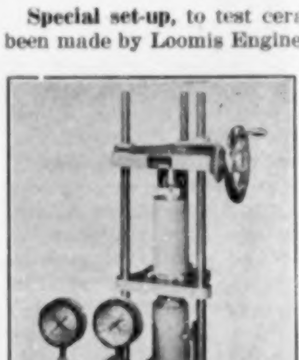
Control centers at head

Model 21 is a new mobile assembly of hydraulic shearing head, counter balancing frame, motor driven power unit and a steel platform truck. The power unit is driven by a 2-hp. motor. It develops sufficient pressure to provide 50-ton cutting thrust in the head.

The equipment is designed to shear and trim coiled bar stock, for cut-off at a draw bench, to make test cuts for piping and to cut cobbles in aluminum mills. The head weighs 150 pounds. Weight of the assembly, including the truck, is 921 pounds.

If you write maker identify as IEN-934

Special set-up, to test ceramic insulators for porosity, has been made by Loomis Engineering & Mfg. Co., 126 S. 14th St., Dept. IEN, Newark 7, N. J., employing its 20-ton hand operated hydraulic press. The insulators ride in a wire basket suspended from a hook beneath the piston sealing plug that is secured to the upper platen. Fuchsin dye solution is poured into the open end cylinder mounted on the lower platen. The upper platen is lowered by turning its handwheel to immerse the work and seal the cylinder opening. Then pressure is applied by operating the hand pump in the base to move the lower platen upward. The work pieces are broken open to determine the amount of dye penetration after they are removed from the basket.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN-935

just off the press!

new 48 page industrial spray nozzle catalog

Here's the most comprehensive industrial spray nozzle catalog ever printed. Complete data on thousands of standard and special nozzles for every type of spraying.

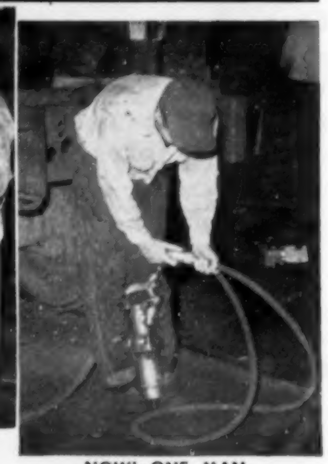
Write for your free copy of Catalog No. 24.

SPRAYING SYSTEMS CO.
3208 Randolph Street
Bellwood, Illinois

If you write maker identify as IEN-936

***$4556 Per year SAVED ON LESS THAN A $10 INVESTMENT**

IT USED TO TAKE 3 MEN
10 MINUTES



NOW! ONE MAN
10 SECONDS!

It used to take three men to change an air tool at the Warren Car Co., (Warren, Pa.) manufacturers of railroad gondola cars. It took one man to kink the air hose, another to hold the tool end, a third to spin off one tool and spin on another. This was usually a ten-minute operation. More important, of the three men changing the tool, only one was a tool operator; one was a welder; and the other a reamer, which meant that they had to leave their jobs just to help the air tool operator change from a riveter to an impact wrench. Today, with a Snap-Tite "Hi Flow" coupling (under $10 investment), it is a one-man job—and it only takes ten seconds to change air tools resulting in a $4,556 savings in valuable production time.

Here's how the coupling works: Just pull back the sleeve on the coupler and snap it off the tool (the built-in valve in the coupler automatically shuts off the air); snap the coupler on the next tool to be used and a full flow of air is automatically restored—no valves to turn, no wrenches to use, and no hose kinking!

For ever application there is a Snap-Tite "Hi Flow" coupling. If you, in your production processes or maintenance operations, have pneumatic or hydraulic applications that require as little as once a year connect or disconnect—the use of Snap-Tite couplings can effect a considerable saving.

Available in sizes: ⅛" to 10" and up. They will handle air, water, gas—practically anything that flows. Snap-Tite couplings are made from steel (cadmium plated); or for special applications, they can be made of any machineable metal with any known plating.

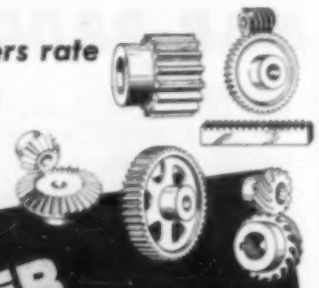
* Figures available on request.

SNAP-TITE "HI-FLOW—the greatest flow in couplings!

★Snap-Tite, INC.
TRADE MARK REG. U. S. PAT OFFICE
210 UNION STREET, UNION CITY, PA.

If you write maker identify as IEN - 938

How cost-wise buyers rate STANDARD STOCK GEARS



GOOD BETTER ✓ BOSTON Gear

2,000 TYPES AND SIZES

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 939

do you use POISONOUS carbon tetrachloride?

FORMULA 602 SAFER!

Continued use of carbon tet causes severe and incurable damage to liver, kidneys, heart, adrenal glands and nervous system by absorption through skin. Safety authorities caution against its use. FORMULA 602 is 24 times safer than carbon tet!

FORMULA 602 CLEANS MOTORS AND ALL ELECTRICAL-EQUIPMENT

FORMULA 602 effectively cleans motors, radio parts, coils, condensers, generators and all electrical equipment. It dries rapidly without leaving a residue, corroding metals or damaging electrical insulation.

OTHER USES!

FORMULA 602 is used to remove residues of solder flux from contact points, dip tank degreasing of parts and tools, as a diluent and wherever carbon tet is now used for cleaning!

SEND FOR FULL INFORMATION!

RESULT OF TEST BY INDEPENDENT LABORATORY!

CARBON TET
10 rats inhaled 125 parts carbon tet per million parts air for 2 days, 30 minutes each day. All 10 rats died!

FORMULA 602
10 rats inhaled 125 parts Formula 602 per million parts air for 14 days, 30 minutes each day. All rats alive and healthy after test!

the PENETONE CO.
BOX IEN-154 TENAFLY, NEW JERSEY

If you write maker identify as IEN - 940

RAYTHEON **WELDPOWER®**

"makes any number of welds with identical characteristics"

says POLAROID CORPORATION

"In making many wire connections required in a research project, we have found Raytheon Weldpower eminently satisfactory" says Mr. D. P. Cooper, Jr. of Polaroid Corp. "Once set for type and size of wire, we can make any number of welds with identical characteristics. Wires are tungsten, molybdenum, brass, steel, nickel, etc. from .080" to .003" dia. No matter how unusual the combination, the flexibility of Weldpower equipment enables us to obtain a satisfactory weld in every case."

Look into the many advantages of joining ferrous, non-ferrous and dissimilar metals with Raytheon Weldpower Units. Send samples or write for full details. Address Dept. 6270IN-1.

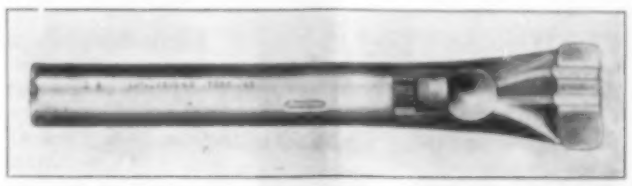
Raytheon Condenser Weldpower Control Units are available in three sizes and with appropriate Weldpower Heads.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN - 941

THERMOSTAT . . Sealed assembly, plastic enclosed, resists corrosion

Source: FENWAL INCORPORATED
216-20 Pleasant St., Ashland, Mass.



List price is $10 to $15

New assembly in the Thermoswitch line can be immersed in most strong or weak acids, alkalis, salts, without danger of corrosion due to its plastic enclosure. It can be employed for temperature control or overheat detection in plating and pickling baths, humidity and corrosion testing chambers, refrigerated rooms and cabinets. It can be set to operate at any temperature between 10 and 165 deg. F.

Current rating of the contacts is 10 amp. on 110-volt ac., 5 amp. on 220-volt ac. Overall length, including the plastic enclosure, ranges from 5¼ to 7½ inches. Diameter is between ⅝ and 1⅛ inches. The lower end of the plastic enclosure can be cylindrical or flattened. A grommet is built in to suspend the thermostat from a hook.

If you write maker identify as IEN - 942

LATHE TOOLS . . High speed bits are supplied heat treated and ground

Source: du MONT CORPORATION
du Mont St., Dept. IEN, Greenfield, Mass.

Fine grain structure

The company announces addition to its line of high speed tool bits, previously described IEN - 7267 - 52. Carbon vanadium steel is employed. Six rectangular sizes range from ¼ by ½ in. to ½ by 1 in. in section. Heat treatment provides a hardness of 66 to 68 on the Rockwell C scale.

If you write maker identify as IEN - 943

INSULATING . . Self-adhesive tape for use on fine coils and cores

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., Dept. IEN, St. Paul 6, Minn.

Resists cold flow

No. 56 designates a new Scotch electrical tape employing a one-mil Mylar polyester film backing and a thermosetting adhesive. The adhesive sets after 3 hr. at 250 deg. F. or 1 hr. at 300 deg. F. The tape will withstand operating temperatures to 220 deg. F. continuously after it has been cured.

Dielectric strength is 5,000 volts or better. Insulation resistance is 100,000 megohms. Electrolytic corrosion factor is 1. Tensile strength is 30 lb. per inch of width. Stretch before breaking is 100 per cent. The tape is yellow in color. It is available in 72-yd. rolls in widths from ¼ to 1 inch.

If you write maker identify as IEN - 944

CLEANING . . Vacuum attachment for company's rotary floor machine

Source: CLARKE SANDING MACHINE CO.
28-E Clay Ave., Muskegon, Mich.

No need to sweep

Floors can be polished, steel wooled, sanded and swept clean at the same time when the new Buffer-Vac attachment has been assembled on the company's rotary floor machine, previously described IEN-7580-52. The machine, known as the P-15 Floor Maintainer, is available also in complete assembly with the vacuum equipment.

A circular head with a rubber skirt surrounds the body of the machine and hugs the floor. Two connections on the head lead to a motor-driven vacuum blower and dust bag secured to the machine handle. There is sufficient vacuum action to pick up loose particles and to clean out crevices over which the machine is moved.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

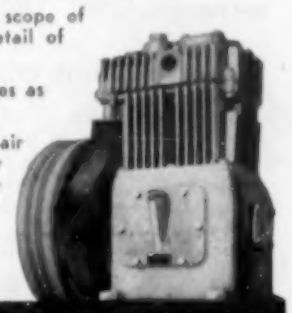
If you write maker identify as IEN - 945

FREE! 16 IDEAS

FOR PUTTING COMPRESSED AIR TO WORK

Send for *"Air Makes Things Hum."* It contains . . .

- 12 pages of stimulating ideas on compressed air use all based on actual applications now functioning at a profit
- illustrated clearly with the full scope of the industrial operation, plus detail of compressor location
- including industrial safety devices as well as production short cuts



You'll see a way to put compressed air to work in your plant or on your product. *"Air Makes Things Hum"*—thought provoking, practical, FREE. Send for your copy now. Write Dept. H-34.

Quincy COMPRESSORS
QUINCY COMPRESSOR CO.
QUINCY, ILLINOIS
Branch Offices: New York • Philadelphia • Detroit • Chicago • Minneapolis • St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 946

QUESTIONS on plastic sheet? Kodak has ANSWERS!

REVISED EDITION!

FACTS ABOUT KODAK'S FAMOUS CELLULOSIC SHEET

Write for your copy today

IF you use, plan to use, or merely want to know more about plastic sheet, this data book belongs first on your desk, then in your files for reference.

Facts and figures about Kodapak Sheet—cellulose acetate, cellulose acetate butyrate, and cellulose triacetate. Includes full information on types, gauges, colors, finishes, and general properties—moisture, permanence, mechanical, optical, thermal, chemical, and electrical—all presented in easy-to-read form.

"Properties of Kodapak Sheet" is a helpful aid for engineers, designers, manufacturers, and converters.

Makes Good Products Better

Kodapak Sheet
"Kodapak" is a trade-mark.

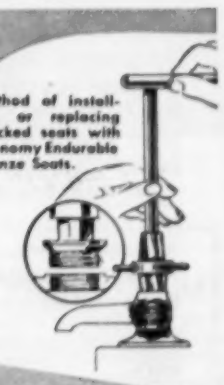
A PRODUCT OF EASTMAN KODAK COMPANY, ROCHESTER 4, N. Y.

If you write maker identify as IEN - 947

MAKE *FAST* PERMANENT REPAIRS ON LEAKING FAUCETS, VALVES

REPLACE Worn Seats with Endurable Bronze in a few minutes, STOP WASTE...SAVE MONEY

With an Economy Kit, you can replace worn and cut seats on valves, faucets and bibbs for a few cents—stop leaks for good. Simple—easy to use—Economy Kits and Seats permit *professional* repairs—and waste permanently. Your money back if not satisfied. Write for illustrated circular and price list.



Method of installing or replacing cracked seats with Economy Endurable Bronze Seats.

SENIOR KIT
11 SEAT SIZES
7 BUSHING SIZES

ALSO REPAIRS VALVES AND CONCEALED FITTINGS

Economy **VALVE SEAT CO.**
1488 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 948

TOLEDO 88 POWER DRIVE

new

BETTER...STRONGER...
MORE POWERFUL...
for operating hand pipe threaders, cutters, reamers

- Fast . . . rugged . . . efficient . . . saves time and muscle!
- Light weight . . . aluminum housing . . . easy to carry about!
- Capacity—⅛" to 2" pipe, ¼" to 1½" bolts; with universal drive shaft, geared die stocks and cutters up to 12".

Converts hand tools to power—in your shop or on the job anywhere! Toledo-engineered to give you finest performance . . . advanced features throughout! Can be mounted on bench or service truck or furnished with set of legs and tool tray as accessories.

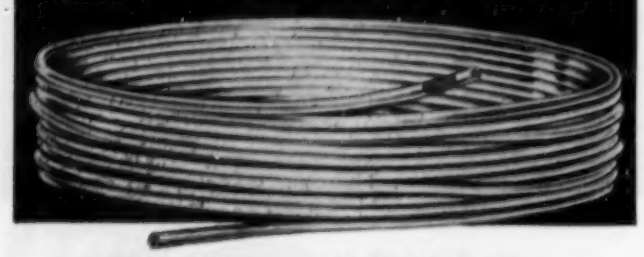
See it . . . try it! Write for new catalog. Order through your supply house. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

Rely on the Leader . . . all the way! TOLEDO

PIPE TOOLS • POWER PIPE MACHINES • POWER DRIVES

If you write maker identify as IEN - 949

Save from 30% to 60% with ALCOA Utilitube*



Aluminum Coiled Tube

Compare these prices with present copper prices. Prove to yourself that ALCOA Utilitube can cost you from 30 per cent to 60 per cent *less*.

ALUMINUM TUBE PRICES

Size—O.D. x Wall Inches	20,000 Ft. Quantity $ Per Ft.	10,000 Ft. Quantity $ Per Ft.
3/16 x .028"	.0342	.0394
¼ x .032"†	.0353	.0399
5/16 x .035"†	.0386	.0404
⅜ x .035"‡	.0398	.0443
⅜ x .049"‡	.0504	.0531
½ x .049"	.0601	.0635

Aluminum is ALCOA "Utilitube." Aluminum prices are for 50 or 100 ft. coils. †These sizes available in 1,000 ft. lengths—Check Price Schedule. ‡These sizes available in 500 ft. lengths—Check Price Schedule. These are approximate prices.

Use ALCOA Utilitube for instrument and other air lines . . . fuel lines for internal combustion engines, cooking stoves, water heaters, unit heaters, refrigerators, appliances (AGA approved) . . . lubricating oil lines for engines, pumps, machines . . . hydraulic fluid lines.

Advantages. Besides its low cost per foot, ALCOA Utilitube is available in long lengths, works easily, has high fatigue and bursting strength. It will not form sludge or gum, will not discolor liquids and has *excellent* corrosion resistance.

Write for complete details today. Use the coupon.

Aluminum Company of America
1005-A Alcoa Building, Pittsburgh 19, Pa.
Please send me your FREE booklet, *Alcoa Utilitube*.
NAME_____
TITLE_____
COMPANY_____
ADDRESS_____

*Registered Trademark

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

If you write maker identify as IEN - 951

GAGE . . Electronic instrument provides reading of surface roughness

Source: BRUSH ELECTRONICS CO.
3403-7 Perkins Ave., Cleveland 14, Ohio

No skill required

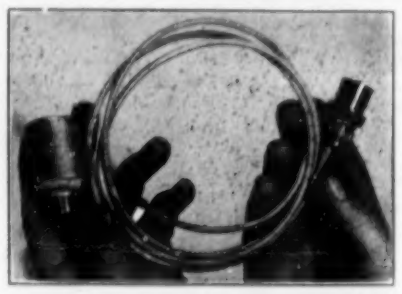
Surfindicator trade names a new instrument manufactured by the company under license from General Motors Corporation. It covers a surface roughness range from 1 to 1,000 micro-inches average deviation from a mean roughness reading. Wave lengths exceeding 0.003, 0.010 or 0.030 in. can be filtered out by positioning a cut-off switch to permit separation of waviness and roughness characteristics. The instrument includes a cover equipped housing with a sloped panel and connection for 110-volt 60-cycle input. An extension cord, fitted with a diamond tipped probe, plugs into the panel. The instrument weighs 15 pounds.

The operator calibrates the instrument by means of surface roughness specimens supplied for this purpose. These specimens comply with American Standards Association Standard B46.2 and the Society of Automotive Engineers requirements. As soon as the instrument has been calibrated, the operator brings the stylus into contact with a work piece and moves the tip across the peaks and valleys of the surface to be measured. Resulting microscopic mechanical motion is picked up by a movable plate vacuum tube transducer and converted into electric signals. These signals are amplified and indicated on the meter as surface roughness in micro-inches. Movement over the work is at about ⅛ in. per second.

If you write maker identify as IEN - 952

SIGNALING . . Vibration detector senses unbalance in rotating equipment

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Weighs four ounces

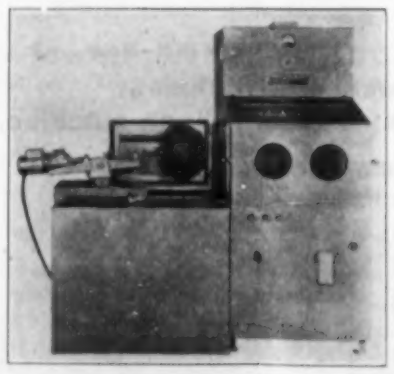
Six crystals, made of barium titanate, compose the stack in the stud mounted sensing element of this new accelerometer. It applies to actuate the vibration relay, previously described IEN-12250-53, to signal or record excessive vibration in large rotating equipment such as turbine generators, large motors, blowers, steam and gas turbines, centrifuges. The unit mounts on the equipment to be protected by means of its ⅜-in. stud base.

Output voltage from the element is proportional to the magnitude of that component of vibration acceleration which occurs in a direction perpendicular to the mounting surface. Vibration frequency range is from 5 to 300 cps. for equipment operating at speeds from 300 to 18,000 rpm. Connecting leads are soldered along each end of the finished crystal stack to terminate in a connection plug to the relay.

If you write maker identify as IEN - 953

CLEANING . . Abrasive blast machine operates wet on small work pieces

Source: CRO-PLATE COMPANY
800 Windsor St., Hartford 5, Conn.



Made of stainless steel

Small castings and extrusions, screw machine products, stampings, precision machined parts, are loaded into the expanded metal plastic coated barrel and are rolled into the cabinet of this new Pressure Blast Roto-Barrel machine. A blast gun, positioned adjustably, aims into the open end of the barrel. A variable speed drive rotates the barrel at desired speed to 78 rpm. to expose the work pieces to the blast stream.

The barrel and its rotating mechanism are mounted on a carriage that withdraws to the position shown in the illustration. Here the work is rinsed to remove abrasive slurry. The barrel and its drive then swivel so the barrel points toward the front for unloading and re-loading.

The operator can enter his hands and arms through protected ports at the front of the housing. He can manipulate the blast gun and can actuate it by knee triggers. The blast operates by either suction or pressure action. No pump is employed to produce the blast.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 954

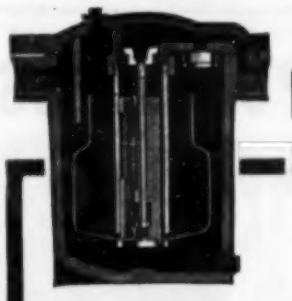
MAR-PROOF MARKING *on delicate surfaces*

Matthews "Airgrit" Marking Machine puts permanent impressions on delicate products without marring or distorting. Codes, numbers, trademarks, etc. are applied in seconds on plastic, glass, cutlery, metal or other precision-finished parts. Unit is compact, safe, and simple to operate. **Each mark takes less than a second to apply.**

Write for additional information, literature, and sample "Airgrit" marked part.

JAS. H. MATTHEWS & CO.
3948 FORBES ST. PITTSBURGH 13, PA.
BOSTON • CHICAGO • PHILADELPHIA • CLIFTON, N. J.

If you write maker identify as IEN - 955



ILLINOIS STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

Illinois Engineering — ILLINOIS ENGINEERING COMPANY
2035 SOUTH RACINE AVENUE, CHICAGO 8
DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN - 956

IMPROVED QUALITY—LOWER COST

TURNABOUT®

ADJUST • A • FORK
HYDRAULIC LIFT TRUCK
with interchangeable forks

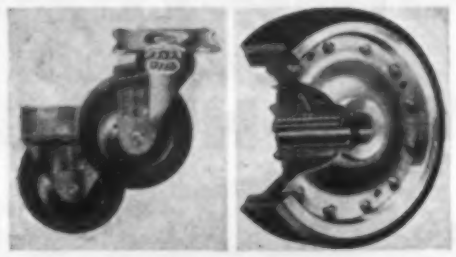
Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year Write for descriptive bulletin

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

If you write maker identify as IEN - 957



DARNELL
Casters & Wheels
Always
SWIVEL
and ROLL

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 958

PREVENT BURNS!

NEW! ADJUSTABLE swivelier
COOLITES*

* Reg. U.S. Pat. Off.

...STAY COOL
Using 100-watt lamp

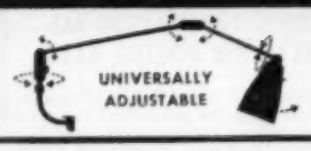
"NEVER GETS TOO HOT TO HANDLE"

AT LAST!
Adjustable incandescent lighting units with metal shades that remain comfortable to the touch even after long hours of use with 100-watt lamp.

Ideal for use on lathes, millers, drill presses and other machine tools; on assembly benches and inspection tables, desks, drafting boards and business machines.

"Stays Put ... At Any Angle!"

"SPOT THE LIGHT WHERE YOU WANT IT...



LIGHT THE SPOT WHERE YOU NEED IT."

• ALL WIRES ENCLOSED

For full information on Coolites, Fluorescent and Incandescent "Dextra-Lites" and other fine Swivelier industrial lighting units—

Write Dept. IE1 for Bulletin 134.

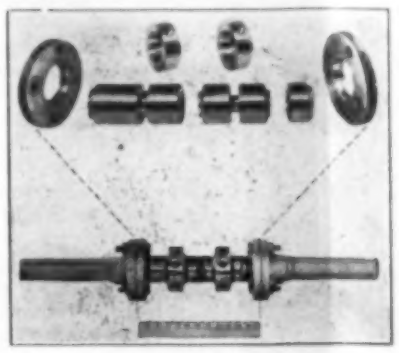
TRADEMARK

SWIVELIER COMPANY, Inc.
43-34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York, N. Y.

If you write maker identify as IEN - 960

METER . . Miniature venturi to measure small gas or liquid flow

Source: SIMPLEX VALVE & METER CO.
6717 Upland St., Philadelphia 42, Pa.



Features accuracy

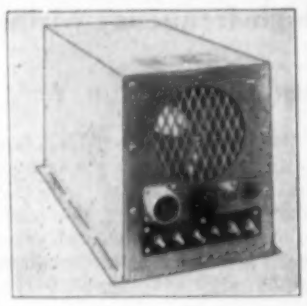
Type TF is a new venturi available in six inlet sizes from ½ to 2 in. and in four ratios of throat-to-main in each size. The unit installs direct in a pipe line. Component parts are welded together. Each part is machined to a tolerance within 0.0005 inch. Annular pressure equalizing rings point where the main and throat taps are located in the assembly.

Flanged ends are standard but threaded ends for sleeve couplings can be provided. The assembly is available in cast iron, stainless steel or bronze. Connections are made in the field to suitable measuring instruments.

If you write maker identify as IEN - 961

RECTIFYING . . Selenium assembly employs magnetic amplifier control

Source: INET INCORPORATED
8653-57 S. Main St., Los Angeles 3, Calif.



No vacuum tubes

Rating is 25 to 500 amp. at 28-volt dc. for this new Airborne rectifier type power supply. Input is on 200-volt 400-cycle three-phase ac. Regulation is within 1 per cent between no load and full load. Recovery is within 0.2 sec. for any load or line variation. The manufacturer guarantees 1,000 hr. of life. Temperature range, with satisfactory action, is between minus 65 and plus 72 deg. C. The design meets JAN Specifications.

If you write maker identify as IEN - 962

TESTING . . Signal generator to test uhf. television receivers

Source: TRIPLETT ELECTRICAL INSTRUMENT CO.
13 Harmon Drive, Dept. IEN, Bluffton, Ohio

Voltage regulated

Model 3436 is a new signal or marker generator for use in adjusting uhf. television receiver front ends and uhf. converters. It can be employed to set end limits of both converters and receivers and to preset fixed channel converters. It provides a reliable signal source to compare the gain of uhf. receivers and converters. Assembly is in an enamel finished steel housing with an etched aluminum panel. List price is about $170.

If you write maker identify as IEN - 963

VALVE . . Hydraulic sequence unit feeds second circuit at preset pressure

Source: DENISON ENGINEERING CO.
1160 Dublin Road, Dept. IEN, Columbus 16, Ohio

Adjusts externally

Pressure build-up, in the main flow stream through this new valve, diverts a portion of the flow to a second circuit so hydraulic equipment on that circuit will operate in required sequence with the initial action. Thus pressure can be applied to a cylinder or ram, with build-up to a predetermined point. There the valve will open to supply oil under pressure to a fluid motor that must operate in correct timing with the ram.

The valve is available in ½ to 1½-in. sizes with the flow rating from 15 to 80 gpm. Threaded connections are standard in the ½, ¾ and 1¼-in. sizes. A sub-plate is available in ¾ and 1¼-in. sizes. The 1½ in. valve has a flanged body. Five pressure ranges are minimum at 25 to 125 lb. and maximum at 1,000 to 2,000 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 964

new TOLEDO PIPE WRENCH

Unconditionally Guaranteed

Heavy Duty

Here's the wrench for rugged duty—and hard tough work—backed by our *unconditional guarantee!* This means you are fully protected against expense if the wrench housing or hook breaks or distorts—we will replace it Free.

You'll like the easy-action nut and single spring that assure quicker easier setting of jaws . . . improved handle design that increases strength and provides better hand-grip. Built for easy handling . . . long life! Complete range of sizes—6" to 48". Write for new catalog. Order through your supply house. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

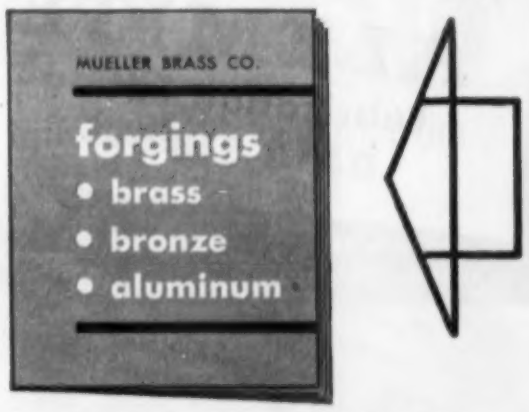
Rely on the Leader . . . *all the way!*

TOLEDO

PIPE TOOLS • POWER PIPE MACHINES • POWER DRIVES

If you write maker identify as IEN - 965

Write for your copy of this new 32-page engineering manual . .

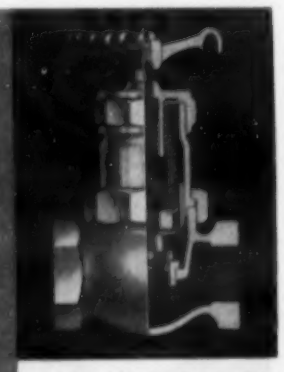


This new illustrated manual is full of information about Mueller Brass Co. brass, bronze and aluminum forgings . . . includes charts, graphs, facts and figures that give complete data about design factors, tolerances and the chemical, mechanical and physical properties of the MBC forging alloys. Get your copy of this valuable handbook today . . . it's yours for the asking.

MUELLER BRASS CO., PORT HURON 26, MICHIGAN
112-A

If you write maker identify as IEN - 966

ARE LITTLE LEAKS CAUSING YOU BIG LOSSES?



No. 804-N Sylphon Packless Valve comes in sizes from ½" to 2" for pressures up to 150 lbs. Also available in larger sizes in No. 1804 with flanged connections for liquid pressures up to 80 lbs. No. 804-NV is ideal for vacuum service.

Stop them with SYLPHON PACKLESS VALVES

● Costly leaks of valuable liquids or gases can be *stopped for good* . . . with Fulton Sylphon Packless Valves. They prevent waste—provide vacuum protection—help your equipment operate more efficiently and economically.

A dual-ply, seamless Sylphon metal bellows replaces customary packing . . . provides a positive seal. Many sizes and types, with body made of brass, bronze, cast iron, cast steel, stainless steel or monel.

Widely used in the processing industries—chemical plants, oil refineries; also in power plants, aboard ships. Ideal for standard equipment. Write for Bulletin AN-813

Robertshaw-Fulton CONTROLS COMPANY

FULTON SYLPHON DIVISION
KNOXVILLE 1, TENN.

Temperature Controls • Bellows Devices • Bellows Assemblies

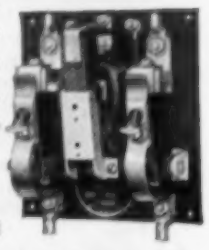
If you write maker identify as **IEN - 967**

Performance . . .

Zenith means "highest point." This literally describes Zenith dependability, "on the dot," as shown by records of long trouble-free, maintenance-free service in widest range of control uses.

Zenith automatic controls

Cover the field: Magnetic Contactors, Remote Control, Reset, Interval and Process Timers, gearless, clutchless Impulse Timers, Program Clocks—also special equipment for your special needs.



WRITE NOW FOR COMPLETE CATALOG!

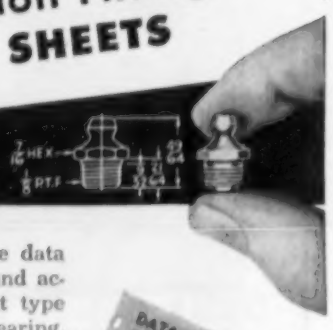
See classified telephone directory for name of local distributor

ZENITH ELECTRIC CO.
146 West Walton Street Chicago 10, Illinois

If you write maker identify as **IEN - 968**

...yours FREE!
the newest, latest
ALEMITE
Lubrication Fitting DATA SHEETS

easy to use! speed detailing!



These simple, easy-to-use data sheets let you quickly and accurately select the right type Alemite fitting for any bearing. Each fitting is illustrated actual size—complete with individual dimensions. Write for *your* free set *now!* Address Alemite, Dept. K-14, 1850 Diversey Parkway, Chicago 14, Illinois

ALEMITE
Industrial Lubrication Equipment
1850 Diversey Pkwy., Chicago 14, Ill.
STEWART SW WARNER

If you write maker identify as **IEN - 969**

Model 8C's smooth, clean-cut design eliminates the multitude of clothes-catching, dirt-catching and knuckle-barking projections common to conventional metal cutting band saws.

AN ALL-NEW DESIGN . . .

FIRST TO MEET TODAY'S METAL CUTTING NEEDS!

You'll get performance never before available when you get the ALL-NEW Model 8C band saw. Designed to meet your metal cutting needs today—and for a *long time* to come—Model 8C embodies years of *Kalamazoo* experience in the field and the best industrial design talent.

Once you've *seen* the new 8C, you'll agree it has everything you've been looking for in an 8-inch metal cutting band saw. Ask your dealer for a demonstration *soon*—or write today for descriptive literature and the name of your dealer.

MACHINE TOOL DIVISION

***Kalamazoo* TANK and SILO CO.**
111 HARRISON ST., KALAMAZOO, MICHIGAN

If you write maker identify as **IEN - 970**

HEATING . . Gas fired space unit, seven sizes to 200,000 btu. per hour

Source: WESTINGHOUSE ELECTRIC CORP.
202 Readville St., Dept T-401, Boston 30, Mass.

Operates quietly

The gas burner in this new unit heater fires into a combustion chamber at the bottom of an assembly of corrosion resistant aluminized steel heat exchanger tubes. Products of combustion moved upward through the tubes to a flue connection near the top. The heat exchanger and burner are enclosed within a steel housing finished in gray-green baked enamel. Air is delivered by a motor driven fan at the rear to pass between the exchanger tubes and issue through the louver equipped front opening. The louvers are adjustable for a desired heat distribution pattern. The burner can be set to handle natural, manufactured or liquified petroleum gas. The heater is for overhead suspension.

If you write maker identify as **IEN - 971**

PLASTIC . . Unicellular polyethylene to insulate high frequency wiring

Source: BAKELITE COMPANY
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

Available in quantities

Bakelite polyethylene has been expanded, to about one-half of its original specific gravity, to make a new unicellular material for application by extrusion on electric wire where weight is a factor and where low electrical attenuation and line loss are required, particularly at ultra-high frequencies.

The compound is heated during the extrusion process and the cellular structure is obtained by expansion of the gas that is formed. Pressure is maintained in the extruder and die to prevent expansion until immediately after leaving the die.

The new material will float in water since its specific gravity is 0.47 as compared to 0.93 for the standard Bakelite polyethylene. The material also retains the chemical resistance of the plastic from which it is made so it is impervious to corrosion by sea water, acids, alkalis and oxidizing agents.

If you write maker identify as **IEN - 972**

BENDING . . Hand operated tool for ½ and ¾ in. copper tube

Source: TAL BENDER INCORPORATED
415-19 N. Water St., Milwaukee 2, Wis.

Weighs 6 pounds

The aluminum head, assembled on one of the two handles, in this new Type TT-57 bending tool carries grooves for ½ and ¾-in. copper tube and mounts two hooks, one at each groove. The second handle rotates on the head center and carries a forming head with it to bend the tube around the head as shown in the illustration. The head is marked in degrees at selected points. The handles are made of two pieces of ¾-in. pipe supplied by the user. List price is $26.40.

If you write maker identify as **IEN - 973**

FURNITURE . . Steel posture chair is adjustable to fit individual user

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.

Green or gray

Padded back rest on this new chair can be adjusted up and down and provides a tilting action so it fits evenly against a user's back. The 14 by 17-in. seat is spring filled and covered with a plastic cover. Beneath the seat the backrest can be moved forward or to the rear and locked in desired position. The tubular steel frame is mounted on 2-in. rubber casters for free movement on a floor. The seat can be adjusted for height between 17 and 22 in. above the floor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 974**

ARMSTRONG *Carbide* TOOL HOLDERS

FOR HIGHER SPEEDS, and HEAVIER FEEDS

ARMSTRONG Carbide Tool Holders and ARMIDE (Carbide) Tipped Cutters come in cased sets for tool rooms and maintenance departments, and individually in all sizes for general machine shops and production turning. They permit not only the ready machining of sand-filled castings, the hardest and toughest steels as well as many heretofore "unmachinable" materials, but also make practical much heavier cuts and cutting speeds up to 600 f.p.m. on ordinary work. They also run from 10 to 100 times as long between regrindings.

WRITE FOR CATALOG

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. ARMSTRONG AVENUE, CHICAGO 30, U. S. A.
NEW YORK • SAN FRANCISCO

If you write maker identify as **IEN - 975**

CUT... OPERATING — MAINTENANCE — SPOILAGE *COSTS!*

ON YOUR TAPPING JOBS!

NEW "TRU-GRIP" TAP HOLDER

Procunier Tappers are the last word in economical, efficient, high speed tapping. Only Procunier has the unique construction features that permit inexperienced operators to tap like experts. Procunier Tappers provide many extra hours of continuous accurate tapping without frequent "down-time" interruptions. Procunier Tappers are producing more—with fewer rejections, fewer spoiled pieces and a minimum of broken taps.

Only Procunier provides: new sensitive double cone friction clutch; soft cushioned action driving pressure; ballbearing equipped; heat treated gears; special balanced gear reversing mechanism; smaller-lighter more accurate tru-grip tap holder; and many others.

Write for FREE Brochure

Giving full particulars on the complete line of Procunier Tapping Machines. Learn how you can adapt them to your specific needs.

PROCUNIER SAFETY CHUCK CO.
18-16 S. Clinton St., Chicago 6, Ill.
Dept. 1
Gentlemen: Please send your illustrated brochure giving complete details, specifications and prices on the improved line of Procunier High Speed Tapping Heads.
Name.....
Address.....
City.....Zone....State....

Procunier
Safety Chuck Company
18-16 S. Clinton St., Chicago 6, Ill.

If you write maker identify as **IEN - 976**

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS • OILS • POWDERS • PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

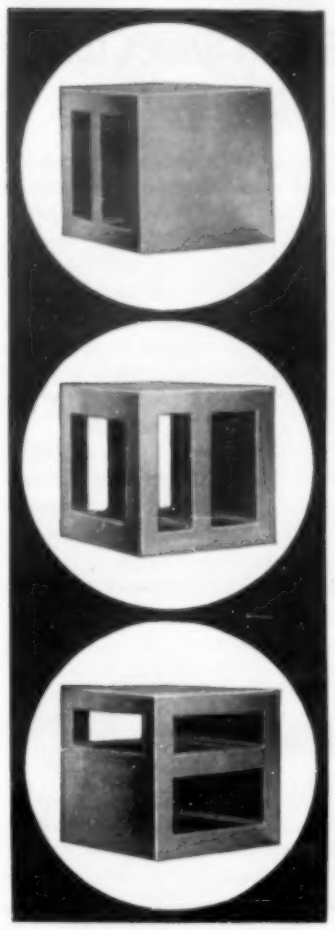
Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

If you write maker identify as **IEN - 977**



3 IN 1

COMBINATION TOOL

CHALLENGE UNIVERSAL BOX ANGLE

This new versatile tool has the clamping facilities of an *angle iron* . . . the stability, balance and accuracy of a *box parallel* . . . the perpendicular flat surface of an angle plate. Made of high grade special analysis semi-steel, heat treated and precision ground. Furnished in two sizes — 6x6x6 and 8x8x8 inches. Other sizes can be made to order.

747

Challenge
TRADE-MARK ®

THE CHALLENGE MACHINERY COMPANY

Office, Factories and Show Room: Grand Haven, Mich.

If you write maker identify as **IEN - 978**

No Bolting with Ladscaf 'LOCK-ON' CLAMPS

It's a snap to erect Ladscaf with these new positive-action clamps. Will not disengage until trigger is released.

UP FASTER

Quickly clamps together to build better scaffold faster. Ladder rungs are spaced just a foot apart.

SWIVEL ACTION

Stabilizers swivel back to move scaffold easily thru narrow aisles.

UP STAIRS

Ladscaf climbs stairs easily —reduces blocking to a minimum. 2-foot wide panels permit convenient passage around scaffold.

Write for informative, New Ladscaf Bulletin IE-1.

Call on Universal's layout and planning service to help you

on all Maintenance Painting and Decorating Problems

UNIVERSAL SCAFFOLDING

Ladscaf low-cost, welded steel ladder panels, eliminate bolting—are quickly erected with exclusive snap-on' clamps. Easily fits in confined areas—can be rolled on casters—and extended to straddle machinery.

Combine New Ladscaf with famous Universal Ezebilt steel-panels and Endlok pipe-and-clamp for difficult and unusual scaffolding jobs.

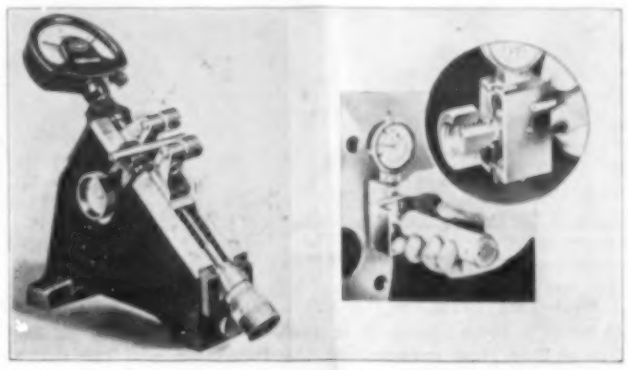
UNIVERSAL MANUFACTURING CORP. ZELIENOPLE, PA.

Distributors offer fast help and service. Consult your classified phone directory.

If you write maker identify as **IEN - 980**

GAGES . . Roll and plug units to check external and internal threads

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.



Designed for unskilled operators

To the left in the illustration is a new roller thread comparator gage on which external threads are checked for deviation plus and minus a master setting on work ranging to 2 in. in thread diameter. To the right is a plug gage in which the threads retract to enter a work piece and then are presented, by releasing a lever, to provide a dial reading that also indicates deviation from a master setting. This gage is available in three sizes for thread diameters between $\frac{3}{16}$ and 4¾ inches.

Separate pairs of rolls and separate sets of measuring jaws are required for the two gages for each type of thread and lead. Both gages can be employed to check smooth cylindrical work and smooth bores when equipped with special measuring rollers and measuring jaws. Tolerance hands are adjustable on the dial indicator faces. The roller gage lists at $272.50 with one pair of measuring rolls. The plug gage ranges from $185 to $236 with one set of measuring jaws. Indicator divisions are 0.0001 and 0.001 in. respectively.

If you write maker identify as **IEN - 981**

ELEVATOR . . Hydraulic ramp raises and lowers in shipping platform

Source: CEMCO INDUSTRIES INC.
Cemco St., Dept. IEN, Galion, Ohio

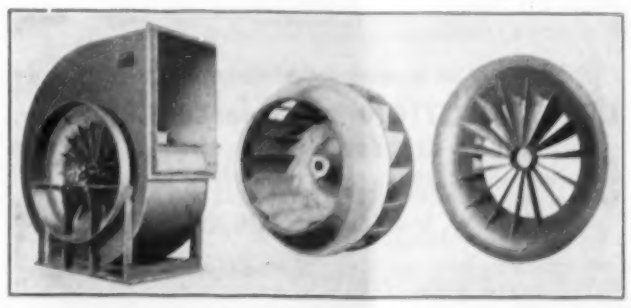
Bridge plate rides truck

Width can be specified at 5 to 7 ft. and length at 7 or 8 ft. for this new Hydraul-Ramp. Vertical movement is through 24 in. at the outer edge. This can be 12 in. above and below horizontal or any combination totaling 24 inches. Vertical movement is by means of a piston and cylinder with a motor driven hydraulic power unit rating 5 or 10 ton. A reservoir with this unit holds sufficient oil to operate 14 ramps. Control centers at a conveniently located valve for each ramp in an installation. The ramp can be raised or lowered and held at any intermediate position.

If you write maker identify as **IEN - 982**

VENTILATING . . Centrifugal fan for general duty, 1,000 to 500,000 cfm.

Source: BUFFALO FORGE CO.
490 Broadway, Dept. IEN, Buffalo 5, N. Y.



"BL" fan — Wheel — Inlet

Air enters the housing side of this new Type BL Limit-Load ventilating fan through a ring of pressed steel stationary inlet vanes assembled in a bell to match the impeller shroud. The vanes minimize turbulence and assist in delivering rated air capacity under unfavorable inlet conditions. The impeller is made of pressed steel with curved shrouds for correct air flow and with pressed steel blades curved and backwardly inclined, welded and riveted in place. The impeller is fitted with a solid back plate in which the hub is secured. The shaft is mounted on anti-friction or sleeve bearings to specification. The streamline housing is fitted with an outlet for efficient air delivery.

Standard sizes range from 12¼ to 108¾ inches. Double inlet assemblies employ two standard single inlet rotors back to back. Operation is characterized by high static efficiency and minimized noise level. Detail description, illustrations, selection tables are presented in 78 page Bulletin F-100.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as **IEN - 983**

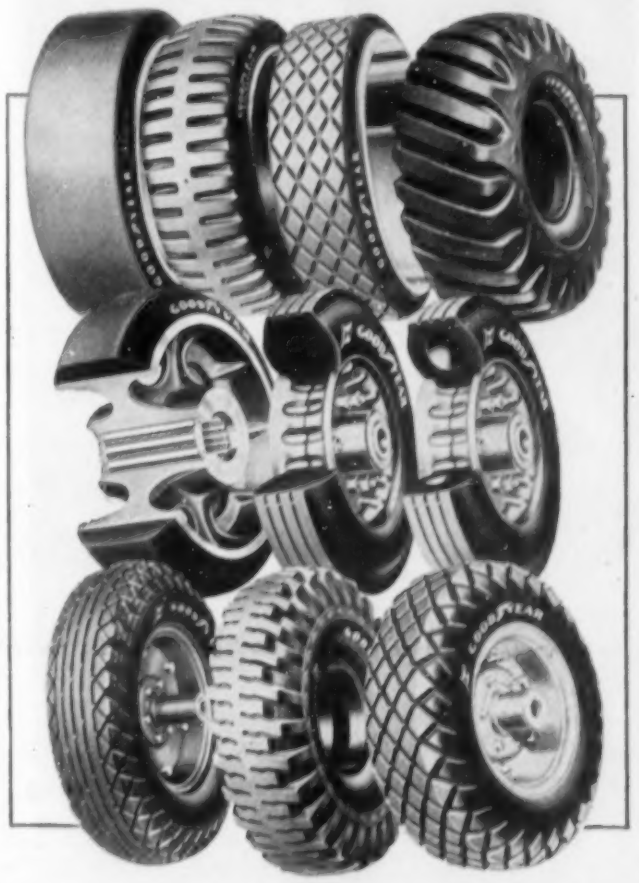
- Write for booklet NI — tells the "inside story" of stopwatches. Illustrates patented spare parts compartment. Shows what to look for in a timer. Complete, thorough, interesting. Must reading for users of stopwatches.
- Brand new Clebar catalog . . . illustrates and describes more than a score of stopwatches and chronographs for every timing purpose. Write for your copy today!

CLEBAR WATCH AGENCY · 521 Fifth Ave., N. Y. 17

If you write maker identify as **IEN - 984**

CUT COSTS

with the right industrial tire for each job!



GOODYEAR makes a *complete* Industrial Tire line. Goodyear can promptly supply you with exactly what you need for each specific job—without resorting to expensive makeshifts.

You'll save time and money—and headaches, too —consulting with, and specifying Goodyear.

FREE TECHNICAL ENGINEERING ADVICE AND SERVICE!

To help solve your particular Industrial Tire problems, Goodyear maintains a staff of fully qualified technical experts. For their free recommendations, write: Industrial Tire Sales, Goodyear, Akron 16, Ohio.

GOODYEAR
INDUSTRIAL TIRES

We think you'll like "THE GREATEST STORY EVER TOLD" —every Sunday—ABC Radio Network
THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

If you write maker identify as IEN - 986

NEW MARSH *Serviceman Soundscope*

. . . cuts servicing and maintenance costs

Most effective instrument ever developed for pin-pointing and identifying mechanical defects. Saves time and dollars tracking down troubles in bearings, gears, mechanisms . . . detects leaks, knocks, piston slaps—any defects that make a sound. A precision instrument of Marsh quality, sensitive to faintest sounds . . . with handy probe and headband as illustrated. A remarkable tool, moderately priced.

Ask for Circular

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corporation
Dept. A, Skokie, Illinois

If you write maker identify as IEN - 987

B.F.Goodrich

FREE TIRE AND WHEEL ANALYSIS can save you as much as 50% on industrial tires

ROUGH HAULING SURFACES? They can slash tire life, increase maintenance costs. The BFG man can show you how to get maximum tire life.

HEAVY LOADS AND EQUIPMENT? Overloads can cause premature tire failures. Your BFG man knows how to match the tire and the load.

Here's how to start cost cutting

Mail the coupon below for free information on the B. F. Goodrich Tire and Wheel Analysis Plan. Without obligation a trained BFG man will study your materials handling operations. He will tell you what type and size tires, what tread design and compound will serve you best.

Because BFG makes a *complete* line of industrial tires, you get impartial recommendations, plus maintenance suggestions that alone can cut costs 20%. Mail the coupon today! A special TW Analysis Plan is available for manufacturers of materials handling equipment.

WRITE FOR THIS BOOK

Specify B. F. Goodrich tires when ordering new equipment

The B. F. Goodrich Co.
Tire & Equipment Division
Department TW-351, Akron 18, Ohio.

Please send me:
☐ *Additional information* on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook"

Name _____
Company _____
City _____ Zone ____ State _____

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

If you write maker identify as IEN - 989

CRANE . . Mobile assemblies, load ratings to 17½ and 22½ ton

Source: THEW SHOVEL CO.
4321 E. 28th St., Lorain, Ohio

For general utility

Model MC-154W, to the left in the illustration, is a new three-axle Moto-Crane. It is available with a diesel or gasoline engine that drives both the turntable and the carrier. Travel speed is to 37 mph. with eight speeds forward and two in reverse. Maximum boom length, with tip extension, is 95 feet. Overall width is 106 inches.

Model MC-424, to the right, is a two engine machine with a gasoline powered turntable mounted on a three-axle carrier driven by a separate gasoline engine. Maximum travel speed is 27 mph. with ten speeds forward and two in reverse. Carrier width is 96 inches. Maximum boom length, with a tip extension, is 125 feet. This crane can be equipped with a diesel engine. Both designs are convertible to shovels, cranes, clamshells, draglines or hoes. Both are equipped with air brakes.

If you write maker identify as IEN - 990

WELDING . . Arc electrode to repair manganese steel castings

Source: WALL COLMONOY CORPORATION
19343-47 John R. St., Detroit 3, Mich.

Weld deposit work hardens

Walmang is a new manganese nickel steel arc electrode to produce a weld metal having the same manganese content, work hardenability and wear resistance as cast 12 per cent manganese steel. It is available bare for dc. arc application or coated for either dc. or ac. use. It is supplied in ⅛ to ¼-in. sizes in 18-in. lengths bare or 14-in. lengths coated. Packaging is in 50-lb. cartons or burlap water proof paper.

If you write maker identify as IEN - 991

STAPLING . . Motor driven machine for use on fiber and corrugated boxes

Source: ACME STEEL CO.
2840 Archer Ave., Dept. IEN, Chicago 8, Ill.

Acme-Morrison N-5

New machine in the company's Arcuate line makes staples from a reel supply of flat wire. It curves, forms and drives to pierce soft or hard materials. The points are turned in on a clincher block without need to set up pressure that might cause the head to puncture the work. The machine can be adjusted by a hand lever for work thickness ranging from 1/16 to ¾ inch.

Formers, flat knife and drivers are reversible. A built-in brake on the coil holder eliminates the possibility of the wire tangling. The line includes five types, post, arm, combination post and arm, side seam, and top.

If you write maker identify as IEN - 992

CONSTRUCTION . . Mixer and elevator feeds dry sand and cement to "gun"

Source: AIR PLACEMENT EQUIPMENT CO.
1009 W. 24th St., Dept. IEN, Kansas City 8, Mo.

For continuous action

Mix-Elvator trade names a new combination of proportioning mixer and bucket elevator to feed a desired proportion of dry sand and cement to the company's Bondactor gunning machine, previously described IEN-13563-52. The mixer can be set for a ratio range from 1 to 3 to 8. The engine drive can be adjusted to provide mixing and elevating capacity between 2½ and 8 cu. yd. per hour. The elevator delivers to an overhead hopper from which the feed inlet chamber on the gunning machine can be kept charged.

The dry sand and cement are "locked" through the central chamber into the bottom delivery chamber. They ride dry through the delivery hose to the gunning machine. Air and water produce the correct mix at the delivery nozzle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 993

For sealed connectors under water

Cannon W Series Connectors operate successfully under water at a depth of 550 feet. Watertight coupling is maintained by special Acme threads on the coupling nuts and shells, and heavy rubber sealing rings. Durable brass shells and overall rugged construction make the W Connectors ideal for heavy duty applications where rough usage is a problem.

W Connectors are available in more than 50 different contact arrangements, with as many as 50 contacts in a single connector. Nominal maximum flashover value 6,500 v; current ratings to 200 a.

it's the **W** *series*

CANNON PLUGS

For engineering data, write for W-3 Bulletin. For a general survey of entire Cannon line, request Cannon Plug Guide.

CANNON ELECTRIC
Since 1915

CANNON ELECTRIC COMPANY, LOS ANGELES 31, CALIFORNIA
Factories in Los Angeles, Toronto, New Haven • Representatives in principal cities.
Address inquiries to Cannon Electric Company, Dept. L-112, Los Angeles 31, Calif.

If you write maker identify as IEN - 994

DIELECTRIC STRENGTH TESTING INSTRUMENTS

. . . from a handful
. . . to a shop full!

You name it . . . ARI either has it, or can build it for you promptly from sound design and long experience with virtually every known type of high potential dielectric strength testing instrument.

Standard "Hypot" Juniors range from 0-1500 volts to 0-6000 volts. Large mobile Hypots available to 50,000 volts, 5 KVA. **Write for data today!**

ASSOCIATED RESEARCH, *Incorporated*
"Precision Instruments Since 1936"

3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 995

The Model F-1 shown here is a single pole, double throw thermostat used to switch circuits from high to low heat where two heating elements are used. May be used to operate fans in air duct or agitators in tank, etc., when such operations in combination with heaters are desired.

Write for Catalog.

Robertshaw-Fulton CONTROLS COMPANY

ROBERTSHAW THERMOSTAT DIVISION, Youngwood, Pennsylvania

If you write maker identify as **IEN - 996**

For All Sheldon Lathes less than 5 Years old...we have just published a new Parts List Manual, with:

. . . . every lathe part and sub-assembly illustrated, named, numbered and positioned on explanatory exploded drawings.

. . . . a section which illustrates and describes each of over 50 modern Attachments and Accessories to make your Sheldon Lathe even more versatile, productive and valuable to you.

To get this valuable Parts List (and Accessory) Manual just write (1) the serial number of your Sheldon Lathe and (2) your name, and (3) your firm name and address, on a post card, letterhead, billhead or slip of paper and mail it to "Parts Manual"

SHELDON MACHINE CO., INC.
4208 North Knox Ave., Chicago 41, Illinois

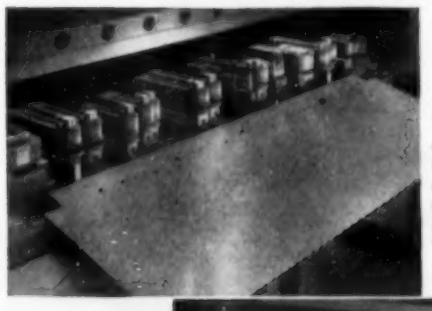
If you write maker identify as **IEN - 997**

PUNCHING 1/8", 1/4" AND 3/4" THICK METAL ?

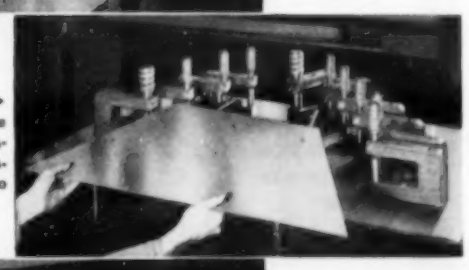
standardize on

WALES

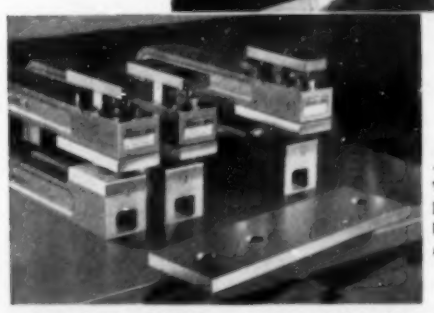
Hole Punching Units



◀ Showing Wales Type "BL" Hole Punching and Type "N" Notching Units in a combination press brake setup for punching and notching mild steel up to 1/8" THICK.



A stamping press ▶ setup of Wales Type "CJ" Hole Punching Units for punching mild steel up to 1/4" THICK.



◀ Showing a setup of Wales Type "HS" Hole Punching Units in a press brake for punching mild steel up to 3/4" THICK.

Only Wales Hole Punching and Notching Units provide the numerous *patented features* plus the *time and cost saving advantages* that have made it "standard practice" with thousands of metal fabricators to *standardize* on this *exclusive* equipment.

Wales independent, self-contained Units eliminate costly, single-purpose custom dies, reduce expensive setup time and practically eliminate press "downtime."

The same group of Wales Units may be interchangeably set up in stamping presses and press brakes. In many cases, setups of Wales Units are in production the same day a hole punching pattern is released by your engineering department.

The multiple advantages of Wales Hole Punching and Notching Equipment are too MANY to tell here, so write for fully-illustrated, functionally colored catalogs TODAY.

WALES-STRIPPIT CORPORATION
George F. Wales, *Chairman*
361 Payne Avenue, North Tonawanda, N. Y.
(Between Buffalo and Niagara Falls)
Wales-Strippit of Canada, Ltd., Hamilton, Ontario

Specialists in Punching and Notching Equipment

If you write maker identify as **IEN - 999**

WASHROOMS . . Aluminum dispenser for waterless skin cleaning cream

Source: SUGAR BEET PRODUCTS CO.
301 Waller St., Saginaw, Mich.

No water to drip

The company announces availability of its aluminum dispenser, independent of the associated equipment holding supplies and receiving waste materials, previously described IEN-1157-53. The dispenser mounts on a wall or post. It takes a throw-away container of Formula SBS-30 waterless cream type skin cleaner. The unit can be mounted near a group of machines so workers need not go to a washroom.

One turn of the crank at the bottom of the dispenser delivers a sufficient amount of the cream material for one hand cleaning application. The cream is worked in until it liquifies and the soil is loosened. Then the hands are wiped with absorbent paper or a cloth towel. Each container holds a sufficient amount for 1,000 to 1,500 applications. The dispenser is known as Type C.

If you write maker identify as **IEN - 1000**

RUBBER . . Silicone stock to mold gaskets, diaphragms, O-rings

Source: DOW CORNING CORP.
P. O. Box 592-A, Midland, Mich.

Technical data upon request

Silastic 675 is a new compounded silicone rubber stock for use in fabricating products such as gaskets, seals, diaphragms, O-rings, bellows, switch boots, dielectric fittings, connectors. Parts made from the material remain flexible at temperature down to minus 100 deg. F. They retain their properties in service to 500 deg. F.

Compression set is in the range of 15 to 20 per cent after 22 hr. at 300 deg. F. It is 20 to 28 per cent after 70 hours. The material contains no toxic additives. Shrinking is limited to 1.8 per cent in molding and about 1 per cent during the following oven cure of 24 hr. at 480 deg. F. The material can be employed in molds for conventional organic rubber parts.

If you write maker identify as **IEN - 1001**

DRIVE . . Variable pitch sheaves and belt for speed ratios to 6 to 1

Source: REEVES PULLEY CO.
800 N. Wilson St., Columbus, Ind.

Bulletin V-532-1

New design in the company's Flexi-Speed variable speed drive employs a manually adjustable driving sheave to assemble on a motor end frame and a flexibly backed driven sheave for assembly on a speed reducer or machine shaft. The drive provides maximum ratio of 6 to 1. The V-belt is available in six lengths to provide a choice of shaft center distances. Ratings are ½, ¾ and 1 hp.

If you write maker identify as **IEN - 1002**

LATHE . . Pedestal base machine swings 12¾ in., 36¼ in. on centers

Source: ATLAS PRESS CO.
53105 N. Pitcher St., Dept. IEN, Kalamazoo, Mich.

Specifications on request

Series 5300 is a new Clausing lathe to swing 12¾ in. over the ways, 7½ in. over the saddle and to take work to 36¼ in. between centers. The forged steel 16-in. spindle is mounted on Timken tapered bearings in a back geared headstock providing 12 speeds between 29 and 1,300 rpm. There are 48 selections for feed and thread cutting, the latter from 4 to 224 standard right or left.

Drive is through a countershaft equipped with a clutch and brake. The malleable iron countershaft bracket bridges the drive opening for structural rigidity. Through hole in the spindle is 1⅜ in. in diameter. The tailstock is bored for a No. 3 Morse taper center.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1003**

Brady QUIK-LABEL Markers ...via GRAYBAR

Send for FREE sample, today.

Get this full card of QUIK-LABELS – enough markers for an adequate on-the-job trial. See for yourself how Graybar-distributed Brady QUIK-LABELS stick to any wiring or conduit surface without moistening . . . how easily they provide positive identification of conduit, cable, wire, circuits, leads, and switches.

Graybar distributes all of the more than 1000 different styles of Brady QUIK-LABELS . . . wire, conduit, and pipe markers, safety signs, masks and many others, including special signs to your order. For details see your nearby Graybar Representative or write: *Graybar Electric Co., Inc., 420 Lexington Avenue, New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

374-121

If you write maker identify as **IEN - 1004**

Simpson Model 260
VOLT-OHM-MILLIAMMETER
$38.95 Dealer's net.

USE IT FOR:
- TV SETS
- RADIOS
- TRANSMITTERS
- BROADCASTING EQUIPMENT
- HOME APPLIANCES
- TWO-WAY RADIO COMMUNICATIONS SYSTEMS
- PHONE LINES
- AIR CONDITIONING SYSTEMS
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- AUTO IGNITIONS, GENERATORS, BATTERIES
- MOVIE EQUIPMENT
- PANEL INSTRUMENTS
- TV CAMERAS
- AUTO LIGHTING SYSTEMS
- GENERATORS
- VOLTAGE SOURCES
- "HAM" RADIO EQUIPMENT
- CABLES
- CONNECTORS
- AUDIO FREQUENCY SOUND CURRENTS

. . . and write for your complimentary copy of "1001 Uses for the Simpson Model 260" 50 pages of uses.

BEST ALL-AROUND TESTER ON THE MARKET

BEST ALL-AROUND TESTER ON THE MARKET

RANGES:
20,000 OHMS PER VOLT DC
1,000 OHMS PER VOLT AC
VOLTS, AC AND DC: 2.5, 10, 50, 250, 1,000, 5,000
OUTPUT: 2.5, 10, 50, 250, 1,000
MILLIAMPERES, DC: 10, 100, 500
MICROAMPERES, DC: 100
AMPERES, DC: 10
DECIBELS (5 RANGES): −12 TO +55 DB
OHMS: 0-2000 (12 OHMS CENTER), 0-200,000 (1,200 OHMS CENTER), 0-20 MEGOHMS (120,000 OHMS CENTER).

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44 · EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN-1006

NOW increased production and long life . . .

with "HARD-BUSHED" DESTACO TOGGLE CLAMPS

This is *new*—Destaco's new clamp design which gives you *hardended* bushings in all series 210, 220, 228 and 240 toggle clamps. The new bushings run full length through the clamp bars from a *larger* bearing surface—and they're deeply serrated to lock in position with no chance of turning in the bars. You get a minimum of wear, smooth, accurate snap action, even under tough production conditions. A feature of our heavier series for some years, this development sets new standards for tooling requiring 500 to 800 lbs. pressures. Further improvements have been incorporated in the "wrap around" construction which strengthens the base.

For any fast clamping action in milling, drilling, welding, bonding, molding, riveting or bolted assembly operations—specify Destaco Toggle Clamps for pressures up to 4000 lbs. Consult our stocking representatives in your area, or select from our 36-page catalog describing over 45 models. Write for his name and your copy today.

DESTACO DETROIT STAMPING COMPANY
342 Midland Avenue • Detroit 3, Mich.

If you write maker identify as IEN-1007

→ *because*

ALUMINUM PAINT LASTS

Painted only three times since erection in 1929, this 160-foot brick-lined steel stack proves the long-life, money-saving qualities of aluminum paint. Now freshly painted for the first time since 1940, seven men were able to complete the job in nine hours. *This* proves the great hiding power and application ease that you'll find in every can of aluminum paint.

Alcoa does not make paint. But we do make the Alcoa Aluminum Pigments that go into the best brands. Together with our paint manufacturing customers, we've developed aluminum paints that lick industrial paint problems—heat, cold, dirt, moisture, smoke, corrosion and fumes.

If *you* have a smokestack, tank, roof, boiler or other facility that needs the best protection, you should investigate aluminum paint. Write to Alcoa today for information.

ALCOA ALUMINUM

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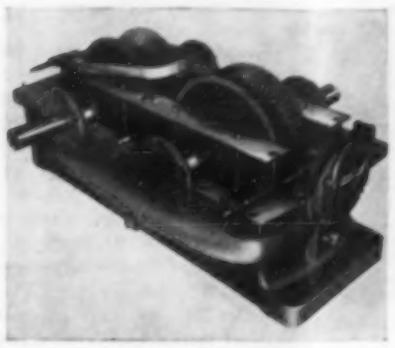
FREE BOOKLET tells how to paint with aluminum.

Aluminum Company of America, Paint Service Bureau
1787-A Alcoa Building, Pittsburgh 19, Pa.
Please send your free book, *Painting with Aluminum*. I plan to paint _____
Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN-1009

DRIVE . . Positive variable speed, rides chain on variable pitch sheaves

Source: LINK-BELT COMPANY
305-9 N. Michigan Ave., Chicago 1, Ill.



Folder 2374

New assembly of the company's previously developed Type H-6 PIV stepless variable drive provides for geared heads to be mounted on the input or the output shafts, or both, to increase the range of speed variation over the basic 2 to 6 to 1 in the original unit. Rating is 20 to 25 hp. Overall dimensions of the basic unit are about 49 by 36 by 27 inches. Top is shown removed.

Input gear ratio ranges from 1.93 to 5.82 to 1. Output ratio is 1 to 6.33 to 1. Power is transmitted by a chain containing packs of hardened steel laminations that are free to move from side to side. These laminations mesh with radial grooves in the sheaves to form positive driving teeth, as the sheave pitch is varied to change the speed ratio.

If you write maker identify as IEN-1010

CLEANING . . Solvent concentrate mixes with kerosene for maintenance

Source: BRULIN & COMPANY
2937 Columbia Ave., Dept. 195, Indianapolis 7, Ind.

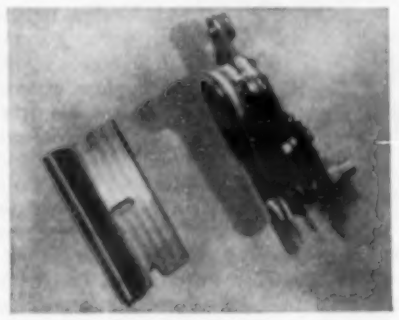
Penetrates corners

Brulinsolv is a new liquid concentrate, non-toxic, non-corrosive and with a pleasant odor. It is free from chlorinated or phenolic compounds. A small amount is added to kerosene to promote removal of dirt, grease, oil from metal surfaces in maintenance work. It can be applied also on concrete floors and painted surfaces. The work can be flushed with water after the cleaning operation.

If you write maker identify as IEN-1011

THERMOSTAT . . High limit cutout for electric appliance protection

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Pittsburgh 30, Pa.



Razor blade size

Uni-Therm is a new snap-acting thermostat that stands normally in closed circuit position. It snaps open when predetermined temperature is reached. It will not reclose the circuit until a reset button is pressed. The unit has been designed to use on air conditioners, room heaters, electric appliances that require high temperature protection. It makes metal-to-metal contact with the heated surface. It is available in ac. or dc. ratings for duty to 550 deg. F.

If you write maker identify as IEN-1012

WELDING . . Spot weld machine employs stored energy power unit

Source: UNITEK CORPORATION
273-77 N. Halstead Ave., Pasadena 8, Calif.

Input 500 watts

Model 1015 is a new assembly in the company's Unimatic Weldmaster line, previously described IEN-12442-49. A movable head is mounted to ride a pair of vertical columns in front of the power unit. Throat dimension measures 6 in. in the standard assembly. Firing pressure can be preset to any point between 2 and 25 pounds.

Energy is stored in a capacitor. Maximum storage capacity is 80 watt seconds. Minimum is 0.2 watt second. Discharge interval is a few milliseconds. The discharge creates a welding current of high magnitude and low voltage at the electrode tips. The machine measures 9 by 22 by 18½ inches. Weight is 35 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

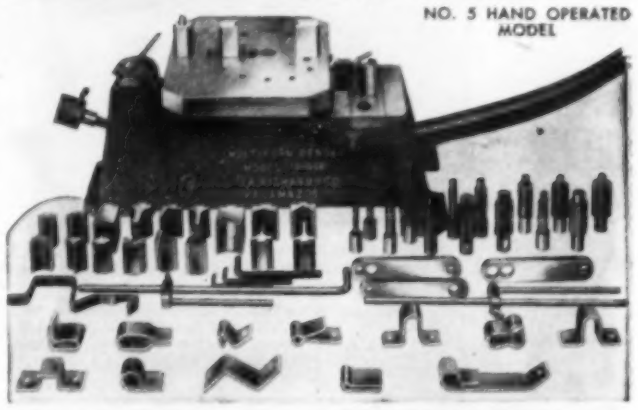
If you write maker identify as IEN-1013

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration to the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ⅛" x 1½".

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

Air Operated Models in this and Larger Sizes Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

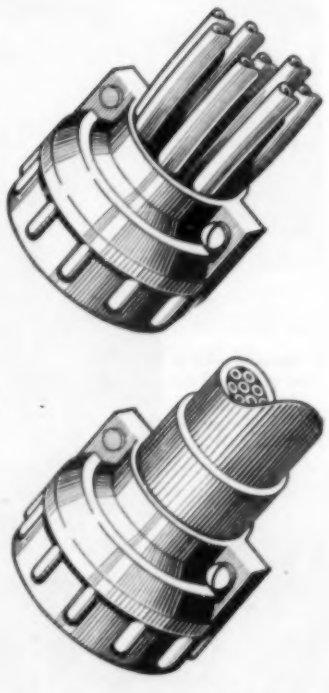
J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN-1014

Bendix Builds a Better *cable clamp* the AN3057B

Inexpensive · Efficient · Versatile

Outstanding Features



Neoprene gland.

Centered clamping action.

Increased close down.

Positive grounding feature.

Cadmium plated die-cast aluminum nut.

Shorter over-all length.

Waterproofs multi-conductor cable.

Immediate delivery.

The new Bendix AN approved AN3057B cable clamp is now available. Engineered by Bendix to the highest quality standards, this cable clamp offers major design improvements. The clamping action is radial and completely eliminates wire strain and chafing by holding the wire bundle firmly in rubber. This clamp will accommodate a wide range of wire bundle sizes, but an even greater range can be handled through the use of the Bendix AN3420A accessory telescoping sleeve.

The new AN3057B cable clamp will also waterproof multi-conductor rubber covered cable on the rear of a connector, or where moisture-proof entrance through a bulkhead or into an equipment box is required.

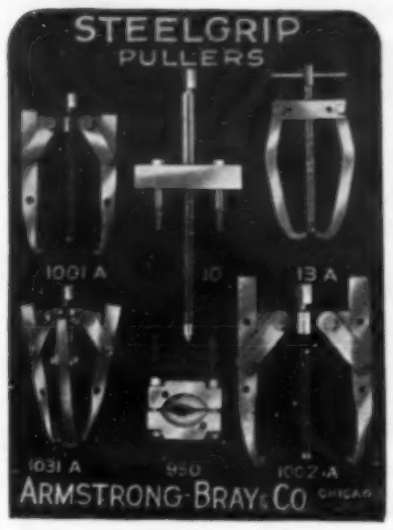
This versatile clamp is a product of the Scintilla Magneto Division of Bendix Aviation Corporation and is a companion AN accessory to the world famous Bendix Scinflex line of electrical connectors. Write our Sales Department for details.

Bendix

SCINTILLA DIVISION of Bendix
SIDNEY, NEW YORK

FACTORY BRANCH OFFICES: 117 E. Providencia Ave., Burbank, Calif. • 582 Market Street, San Francisco 4, California • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • 512 West Avenue, Jenkintown, Pa. • Brouwer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin. EXPORT SALES: Bendix International Division, 205 East 42nd St., New York 17, N. Y.

If you write maker identify as IEN-1016



The 6 most needed pullers

A Complete Package Unit . . .

These popular pullers comes on a permanent steel tool rack. The sizes and type of STEELGRIP Gear, Wheel and Bearing Pullers most frequently needed in tool room, maintenance shop and garage are now packaged on this practical heavy gauge fitted steel board. With these drop forged quality tools, you can pull wheels, gears, pulley pinions and bearings off from shafts easily and quickly without battering or breakage.

Pullers are cadmium plated board finished in deep blue "hammered finish" with gold trim.

Write for catalog of standard and Special Wheel Pullers.

ARMSTRONG-BRAY & CO.
5380 Northwest Highway • Chicago 30, Illinois

If you write maker identify as IEN-1017

Immediate Shipment

STYLE 800D STACKING BOX

- Reinforced Corners
- Drop Handle Each End
- Spotwelded Construction
- Continuous Stacking Rim
- All Four Sides

Complete Shop Box and Shop Equipment Catalog and Discounts on request.

OTHER SIZES AND STYLES AVAILABLE

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
801D-18	10"	16"	6"	18	2.31	2.53
802D-18	12"	18"	8"	18	2.75	3.05
803D-18	12"	18"	6"	18	2.48	2.76
804D-18	10"	20"	8"	18	2.64	2.94
805D-18	10"	18"	6"	18	2.42	2.67
802D-16	12"	18"	8"	16	3.08	3.38
804D-16	10"	20"	8"	16	2.95	3.25

PHONE • WIRE • WRITE
BAldwin 9-1805

BAY PRODUCTS INC.
3011 North 16th Street, Philadelphia 32, Pa.

If you write maker identify as IEN-1018

get the facts

32 informative pages on

LAMSON BILLMYRE BLOWERS & EXHAUSTERS

. . . a complete file of blower and exhauster information — Fundamental Engineering Laws for Blower Applications, Blower Engineering Tables, Blower Operating Features, application data, and lots more — all in one handy catalog.

LAMSON

We have a copy for you . . . just clip this coupon to your signed letterhead and mail.

LAMSON CORPORATION
101 Lamson Street, Syracuse 1, N. Y.

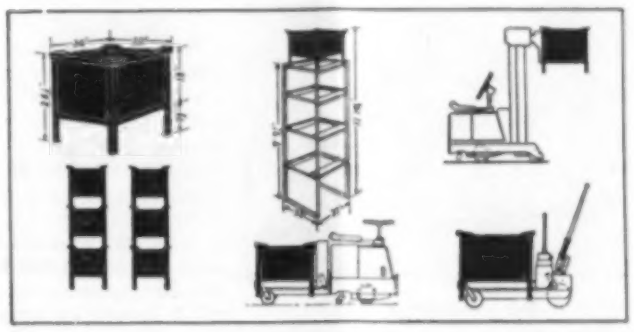
Gentlemen:
Without any obligation on my part, please send me my copy of the Lamson Billmyre Blower and Exhauster Catalog B-6.

Name _____ Title _____
Company _____
Address _____
City _____ Zone ____ State ____ 8804

If you write maker identify as IEN-1019

HANDLING . . Load boxes, racks and trucks in standardized unit

Source: MARKET FORGE CO.
25 Garvey St., Dept. IEN, Everett 49, Mass.



To mobilize production

Load Unit System designates a new standardized combination of leg equipped welded steel box, welded steel stacking rack and three types of truck to include high and low lift power operated units and a low lift hand unit. The box is square, provides 8¼ cu. ft. with a load capacity of 1 ton. Each rack takes 5 boxes. The trucks rate 1 ton each.

The boxes can be stacked, one upon another, in storage or at a production station. The legs permit filling or emptying any box in a stack without having to remove it. The racks are employed for storage and for plant departments where it is required to remove or place any box in a stack without interfering with the others.

The high lift truck is employed for stacking and removal. It can operate in freight cars and motor trucks or under balconies, low ceilings and in narrow aisles. The low lift power operated truck is employed when the boxes are to be moved considerable distances. The hand operated truck applies for short distance movements of individual loads.

If you write maker identify as IEN-1020

VALVE . . Bronze gate design, 1/8 to 2 in., 125 and 150 lb. service

Source: OHIO INJECTOR CO.
Ohio St., Dept. IEN, Wadsworth, Ohio

Opens to service

Figure 7102, for 125-lb. service, and Fig. 7152, for 150 lb., identify two new series of bronze union bonnet gate valves to supplement the company's previously developed 200-lb. valves. Sizes are ⅛ to 2 inches. The bonnet is held in place and sealed with a lug type hexagonal union ring. The stem is made of the company's OIC-40 alloy which is characterized by its freedom from galling or seizing.

The stem is fitted with a ventilated die cast hand wheel and is sealed by a molded one-piece plastic packing ring that will not harden or crack. The lower end of the stem is fitted with an integral T-head to engage the gate wedges. It carries a reverse seat so the valve can be repacked in fully open position without loss of line pressure.

Body thread chambers are proportioned to prevent the ends of the connecting pipe from contacting the seat walls and springing them out of shape. Full size ports minimize turbulence and pressure drop. The seats are integral with the body.

If you write maker identify as IEN-1021

HEATING . . Steam heated space unit combines fan, guard and motor mount

Source: L. J. WING MFG. CO.
Vreeland Mills Road, Dept. IEN, Linden, N. J.

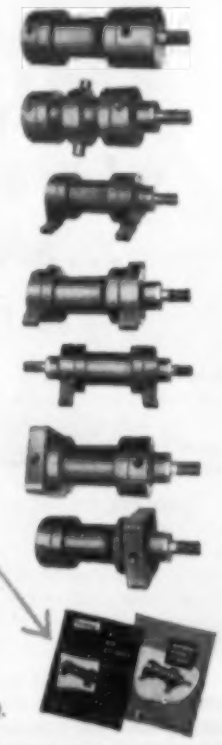
Bulletin U-8

New design in which the motor mount and fan guard make a single assembly at the rear is available on nine of the sizes in the company's Series-U steam heated space units. Capacity ranges from 78,000 to 360,000 btu. per hour and from 1,200 to 5,500 cfm. at the inlet, based on 70 deg. F. temperature. The complete line includes 19 units with rating at 9,360 to 1,000,000 btu. per hour and air inlet capacity at 196 to 15,000 cfm. The new fan mounting design is available on the horizontal discharge unit illustrated and also on certain of the vertical discharge assemblies.

Construction includes seamless drawn copper finned tubes in which flat fins are forced into place and are bonded with a metallic alloy. Steam and return headers are made of tubular steel with a raised flat surface for the tubes. The header tube connection is by a mechanical joint consisting of a compression union that presses two deep rings into the tube. Assembly is made in the heater casing so the tube ends are guided, spaced and secured against vibration by a channel shaped retainer, free to compensate for tube expansion.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1022



CYLINDERS!

CYLINDERS!

CYLINDERS!

Lindberg builds a complete line of standard heavy duty air and hydraulic cylinders . . up to 12".

Lindberg also builds super heavy mill type cylinders for extremely tough and heavy jobs.

Ask for bulletin #731 (air) . . #701 (hydraulic).

LINDBERG AIR . . HYDRAULIC CYLINDERS

Lindberg Air and Hydraulic Division

Lindberg Engineering Co. • 225 North Laflin Street • Chicago 7, Illinois

If you write maker identify as IEN-1023

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

DRYING and CONCENTRATING CO.
232 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN-1024

CLEMENTS

Cadillac

PORTABLE ELECTRIC
COMBINATION BLOWER-SUCTION CLEANER

This versatile blower, available with attachments, can be quickly converted for handling a broad variety of maintenance tasks (suction cleaning, spraying, etc.) and for many special production jobs, such as preheating, bending, annealing, and soldering.

COSTS LITTLE TO BUY, COSTS LITTLE TO USE, SAVES A LOT!

CLEANS FASTER EASIER . . . BETTER

MADE IN 5 MODELS 1 H.P. 2 SPEEDS ILLUSTRATED

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacements, down-time, with this powerful cleaning tool.

Ask your mill supply dealer for a demonstration, or write us for information.

"Most Useful Tool in the Plant"

CLEANS MACHINERY • MOTORS • TOOL ROOMS • STOCK BINS

CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN-1025

Lubricates air cylinders, valves and tools ...adds years to their life

Air Line Lubricator
Schrader No. 3048A

You will get better service and longer life out of your air control equipment if they are lubricated regularly. And there is no better way to do this than with the automatic Schrader lubricator.

Operating on the venturi principle, small drops of oil are picked up and continuously mix with the air to lubricate the equipment. Connected right in the air line . . . no moving parts. Transparent plastic bowl shows oil level at all times.

Write for details on the Schrader lubricator as well as other Schrader air line accessories that will help you get the most out of your air line equipment.

A. SCHRADER'S SON
458 Vanderbilt Ave., Dept. D-33, Brooklyn 38, N. Y.

If you write maker identify as IEN-1026

Specify OHIO GEARS AND REDUCERS • STOCK or SPECIAL

Towmotor's "one man gang" is designed to "take it" and the many factors that go into manufacturing a lift truck must be equally as rugged to withstand a lift truck's round-the-clock grind.

Towmotor units operate the world over — loading ships — lifting steel coils and bars to trucks or stacking lumber, stone and finished products. Do you know of a greater test for gears?

Towmotor depends on Ohio Gears to insure their products' operation and reputation at home and abroad.

Towmotor is another good reason why more automotive designers are specifying Ohio Gears. Perhaps Ohio Gear can do as much for your product. See their nearest distributor or write direct.

Pictured here are Ohio Gear's power transmission units used in Towmotor's, 2-ton load, Diesel powered model 480-PD Fork Lift Truck.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
1345 E. 179th St., Cleveland 10, Ohio

OHIO GEARS

If you write maker identify as IEN-1027

CUT IT OUT!

Cut what out?

any KEYWAY in any of your gears, milling cutters, pulley hubs, collars, couplings — *any* size from 1/16" to 1", in *any* bore from 1/4" to 3"

Cut it out *fast* — sixty seconds per keyway

Cut it out *cheap* — as little as 1¢ per keyway

CUT OUT THIS COUPON *for the facts, man, the facts!*

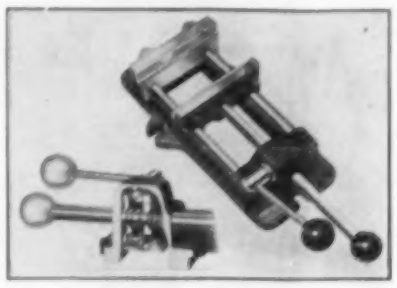
The du MONT CORPORATION, Greenfield, Mass.
Rush new Catalog and price list N—on *Minute Man* Keyway Broaches and Kits, to

Name.....
Company.....
Address.....

If you write maker identify as IEN-1028

VISE . . Quick acting design builds up grip on compressible work

Source: HEINRICH TOOLS INC.
Dept. IEN, Racine, Wis.



For production use

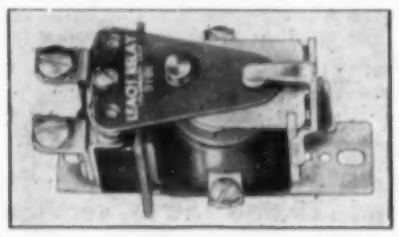
Series PA designates a new locking mechanism on the company's Grip-Master vise, previously described IEN-6957-46. Two spring backed locking rings are employed in connection with a lever operated cam to alternately apply pressure ranging from 750 to 1,400 lb. and holding effort ranging from 200 to 350 pounds. The resulting action permits "inching" the movable jaw forward, after it has contacted the work, so a firm grip can be set up on work that will compress under pressure.

Four sizes range from 3 to 8 in. in jaw width and from 3 to 9 in. in maximum opening. Overall height at the jaws is 2¾ to 4½ inches. Base length is 9 to 17¾ inches.

If you write maker identify as IEN-1029

RELAY . . Single pole, single throw, normally open, 30 amp. on 110 volt ac.

Source: LEACH RELAY CO.
5915 Avalon Blvd., Dept. IEN, Los Angeles 3, Calif.



Heavy duty design

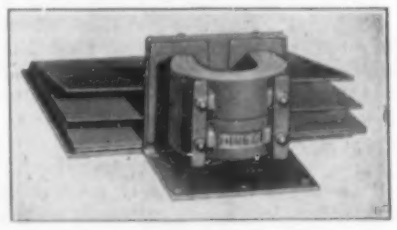
Number 9191 designates this new relay. It is available with coils rating to 600-volt ac. or 220-volt dc. The coil is designed for continuous duty. The normally open double break contacts will handle the load to a 1½-hp. 110-volt ac. motor or to a 3-hp. 220-volt unit on standard duty.

Overall dimensions are about 3¼ by 1⅞ by 1⅞ inches. The coil is vacuum impregnated with varnish. Mounting holes in the bracket permit assembly from above or below a surface. Insulation and contact life meet requirements set up by Underwriters' Laboratories.

If you write maker identify as IEN-1030

HANDLING . . Magnetic separator "floats" ferrous sheets for hand feed

Source: DINGS MAGNETIC SEPARATOR CO.
4738-42 W. Electric Ave., Milwaukee 46, Wis.



Protects the worker

Steel sheets are suspended, free from each other, at the top of a pile by the action of this new permanent magnet. It is available in three basic strengths and four standard heights to handle sheet steel in 28 to 10 gage blanks in sizes to 30 by 20 inches. The magnets can be used singly or in pairs.

The elements are secured on the rear of a non-magnetic bracket. They induce a magnetic field in the stacked sheets that tends to repel one sheet from the next one. Thus the sheet ends fan out and an operator can grasp one at a time.

If you write maker identify as IEN-1031

BATTERY CHARGING . . Rectifier and control, 6 and 12 volt ratings

Source: ACME ELECTRIC CORP.
26 Water St., Dept. IEN, Cuba, N. Y.

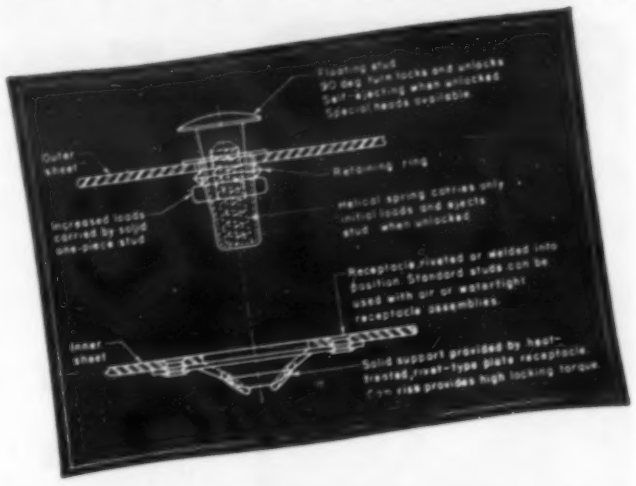
Bulletin BC-196

A toggle switch is positioned to the left or right on the housing face of this new charging equipment to set it for a 6 or 12-volt vehicle battery. The input side connects to a 110-volt ac. power source and the output side clips to the battery terminals. The charger is dry disc type in which alternating input voltage is stepped down through a transformer and then is converted to dc. by means of the rectifier.

Charging rate gradually decreases, as the battery charge builds up, until it reaches a minimum of 3 amperes. When the switch is set on 12-volt output, two 6-volt batteries can be connected in series to be charged simultaneously.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1032



HOW QUICK-LOCK CUTS FASTENING COSTS

QUICK-LOCK speeds up the mounting and demounting of detachable panels, works equally well on curved or straight sheets. It is adaptable to many different fastening applications in the aircraft, automotive, railroad, electrical and appliance fields. Write for literature and samples today.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, New York

Simmons | QUICK-LOCK SPRING-LOCK ROTO-LOCK LINK-LOCK

FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

If you write maker identify as IEN-1033

send for this sample . . . it may open your eyes!

A simple request will bring you a sample of one of the most amazing materials ever developed by science. It is Tufflex, the fiber felt, and it's cutting production costs—adding quality—in many industries today. Tufflex is downy soft—amazingly resilient. It cushions. It withstands heavy impact blows. It insulates. It deadens sound. It is easily fabricated to any size or shape. Tufflex is available in a variety of densities and thicknesses—and in moisture resistant and fire retardant forms. Learn more about the many new uses for Tufflex—send today for your sample and complete information.

Wood Conversion Company, Dept. 126-14, First National Bank Bldg. St. Paul 1, Minnesota.

TUFFLEX* A Product of Weyerhaeuser

*REG. U. S. PAT. OFF.

If you write maker identify as IEN-1034

NOW...a Binks Air Compressor for every industrial use!

Send today for this helpful 16-page DATA BOOK

Whatever your compressor needs may be...we can match your specific requirements. Choose from this *complete line* of *performance-proved* units—5 types in practically any size or capacity. Now you can have exactly the air compressor you need—*right* in performance, dependability and price.

Write at once for CATALOG 810—16 pages packed with information to help you select Air Compressors. Address:
Binks Mfg. Co., 3120-34 West Carroll Ave., Chicago 12, Ill.

Binks EVERYTHING FOR SPRAY PAINTING

GUNS • SPRAY BOOTHS • MATERIAL TANKS • EXTRACTORS & ACCESSORIES

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as IEN - 1035

When you need precision steel

DOWEL PINS

Get **SAME-DAY SHIPMENT** from

Order from Acme's huge stock of standard nominal and oversize Dowel Pins . . . shipment made within 24 hours. Whether you need a few, or many thousand, packaged or bulk, Acme can supply them FAST! Special sizes ground from semi-finished stock to fill any dowel pin requirement. Send for details now!

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Ill.

MFRS. OF STANDARDIZED DRILL JIG AND FIXTURE BUSHINGS

If you write maker identify as IEN - 1036

Production

Soldering

BETTER JOBS FASTER

more

Economically

Complete with Fixtures and Conveyer

Save Labor, Solder... Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

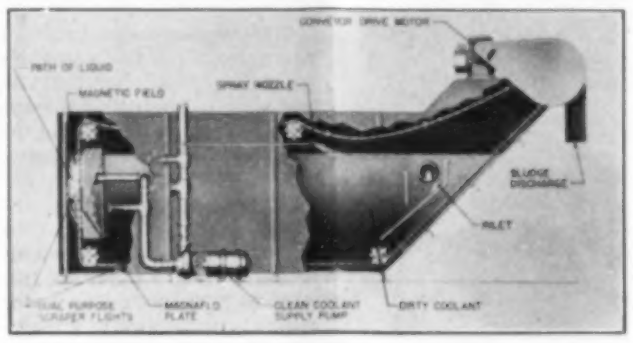
Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN
3520 W. Carroll Avenue, Chicago 24, Ill.
Telephone: SAcramento 2-3710

If you write maker identify as IEN - 1038

SEPARATING . . Magnetic equipment handles 18,000 gallons of quench oil

Source: UNITED STATES HOFFMAN MACHINERY CORP.
219 Lamson St., Dept. IEN, Syracuse 6, N. Y.



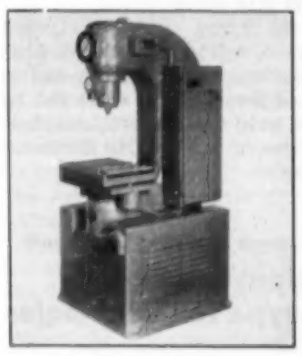
Brochure describes industrial filtration

Schematic illustration shows relative assembly of the component parts in the largest Magnaflo separator that the company has built. Its welded steel tank holds 18,000 gal. of quench oil. It encloses a slow moving motor driven scraper conveyor and an Alnico magnet plate. Inlet is above a deflecting baffle at the sloping end of the tank. Clean oil is drawn from back of the magnetic plate by a centrifugal pump for use in the quenching tanks served by the separator. Sludge collecting on the bottom of the tank and that which is removed from the liquid by the downward moving rear end of the scraper conveyor is discharged continuously at the upper end of the slope. From 75 to 90 per cent of ferrous solids are removed. Overall length of the equipment is 57 feet. The separator line contains standard units rating 10 to 1,000 gal. per min., or larger to specification.

If you write maker identify as IEN - 1039

TESTING . . Hydraulic Brinell machine for production parts on a conveyor line

Source: STEEL CITY TESTING MACHINES INC.
8817 Lyndon Ave., Dept. IEN, Detroit 21, Mich.



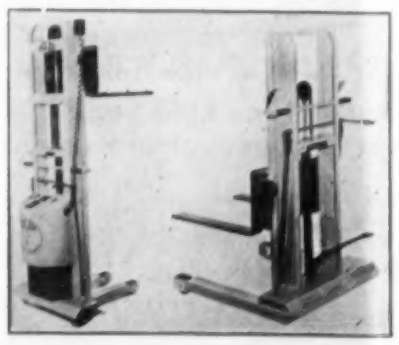
Bulletin KDR-10X

Conveyor rollers, mounted in a hydraulically supported frame above the table of this new Model KDR-10X machine, alternate with a series of hardened steel bars mounted solidly on the machine table. The hydraulic support for the rollers is tied in with operation of the machine so the rollers move down to bring a work piece to rest upon the bars for a hardness test. They move back up to pick up the work for removal from the machine when the ball penetrator spindle retracts. An operator can move one work piece after another into position, depress a knee actuated switch and watch the direct reading dial to see that its pointer comes to rest between the previously positioned tolerance hands on the dial. Motor driven hydraulic equipment, in the machine base, makes the unit essentially self-contained and ready for installation in a conveyor line.

If you write maker identify as IEN - 1040

ELEVATOR . . Portable design, 1/4 ton, hand and power operation

Source: BIG JOE MFG. CO.
900 W. Jackson Blvd., Dept. IEN, Chicago 7, Ill.



Specifications on request

Illustrated are new designs in the company's line of portable elevators, the motor operated assembly to the left and the foot operated unit to the right. The motor unit operates at 40 fpm. with a capacity load. It is equipped with a remote push button control that permits the operator to ride to the top of the lift on the forks or platform without losing control of the action.

A trickle charger is built in. It can be specified for input at 110 or 220-volt ac. The motor drives a hydraulic pump that supplies pressure to the elevating cylinder. The assembly can be turned in a 33½-in. radius. The new power equipment can be added to any of the company's power operated trucks, previously purchased, at a list price of $126 above the list of the unit on which it is to be employed.

The foot operated assembly employs a Triple Action hydraulic pump in which each stroke moves the forks or platform upward through 3½ inches. This compares with 1⅛-in. per stroke on the previous design. The operating pedal is hinged so it can be moved out of the way when it is not in use. Both assemblies are equipped with floor locks to hold them in set position upon operating a lever.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1041

CUTTING parts production costs

Write for Bulletin TB-339

TA-4001(LM)

B&W Bulletin on Cold-Drawn Seamless Carbon Steel Tubing gives you a good start toward real economies. Gives tolerances, mechanical properties and profitable information.

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 1042

production flows smoothly...

at top speed, at all times, yet free of rejects

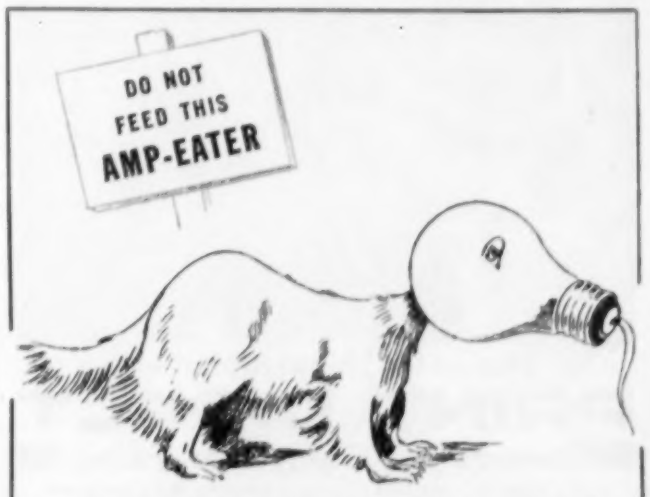
Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 1043



Is this voracious Amp-eater devouring current and damaging precious eyesight in your factory? Not if you follow the suggestions in the Champion Maintenance Manual,* and make sure you have the right lamps—efficient, long-lasting Champion Lamps.

**Let us mail you a free copy.*

CHAMPION LAMP WORKS
600 Broad Street • Lynn, Massachusetts

CHAMPION lamps

If you write maker identify as IEN-1044

The Quick, Easy, Handy Way to TAP BY HAND

. . . Adapts for LATHE USE

THE DAHLSTROM TAP GUIDE virtually eliminates tap breakage—and saves those costly hours spent prying broken taps out of dies. Anyone can use it. Just a few turns of the spindle and the job is done.

Winds through continuously, with no backoff. Work is always dependably straight and square. Fasten it to a post or set it on top of a big job. This handy tapper comes equipped with 9 adapters, 8-32 to ⅜" but taps are not furnished. Spindle can be pulled out and used in a lathe, or used as tap extension for hard-to-get-at-places. 13" x 8" x 14", wt. 32 lbs. $59.50 F.O.B. factory.

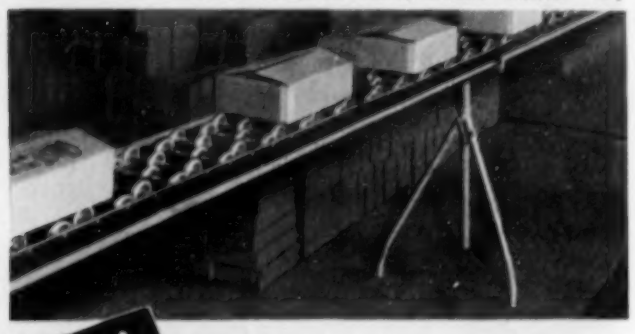
Send for bulletin!

Also Makers of Dahlstrom Autostrop and Tap Chuck

BRANCH MFG. CO.
NORTH BRANCH, MINN.

Dahlstrom **TAP GUIDE** — **59.50** F.O.B. FACTORY

If you write maker identify as IEN-1045



NEW

FARQUHAR *Roll-Free* GRAVITY CONVEYORS

for faster materials-handling!

SPEED your production and cut materials-handling costs with trouble-free, economical Farquhar ROLL-FREE gravity conveyors. ROLL-FREE conveyors are scientifically designed, not only to move boxes, crates and cartons smoothly and easily, but to perform year after year with a minimum of maintenance. This is no idle claim—our engineers will be glad to show you why, at no obligation. Write to the address shown below, telling us what you want to move.

OLIVER *Farquhar* CONVEYORS

FREE! "Owners Report"—a booklet of case histories describing money-saving Farquhar conveyor installations. Write The OLIVER Corporation A. B. Farquhar Division Conveyor Dept. J-32 York, Penna.

POWER-BELT & GRAVITY CONVEYORS

If you write maker identify as IEN-1046

Eliminate Shipping Labels!

PRINT DIRECT

Speeds Up Freight Marking

Quick! Accurate! Easy! Print shipping information direct on cartons, boxes, packages. Eliminate double operation of preparing labels and then pasting them to the containers. Get 1,000 or more clear, sharp impressions from one stencil without re-inking. New FORM-CUT® Stencil has facsimile of your label or shipping form die-impressed into the stencil . . . then type or write in address or identification data . . . attach to duplicator . . . and print, like using a rubber stamp. Write for Literature and FREE SAMPLE FORM-CUT STENCIL AND PRINT.

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

Also for addressing shipping tags and labels . . . prints postcards, menus, forms, bulletins. 8 complete outfits: $9.50 to $99.50, including supplies (f. o. b. factory). At office or shipping room supply dealers.

OVER 30 YEARS

MULTISTAMP STENCIL DUPLICATOR

If you write maker identify as IEN-1047

VISE . . Air hydraulic design connects to plant compressed air line

Source: WILTON TOOL & MFG. CORP.
927-39 Wrightwood Ave., Chicago 14, Ill.

Closes quickly

WiltOmatic trade names a new assembly of the company's standard screw operated vise and a valve controlled air hydraulic head with a foot or hand operated control valve. The vise jaws can be set at approximate position. They will close in to grip the work when the valve is opened to admit pressure from a plant air line at 40 to 150 pounds. The power stroke is adjustable to a maximum of ¾ inch. Complete vise assemblies or conversion kits consisting of the valve and power unit and connecting hose are available.

Four sizes range from 2½ to 6 in. with jaw opening maximum at 3 to 9 inches. Rated locking force between the jaws on 100-lb. air supply is 1,250 to 6,000 pounds. Complete assemblies list at $92 to $238. Conversion kits are $77 to $134.

If you write maker identify as IEN-1048

HAMMER . . Soft faced drift employs interchangeable plastic tip

Source: NEW PLASTIC CORP.
1026 N. Sycamore, Dept. IEN, Los Angeles 38, Cal.

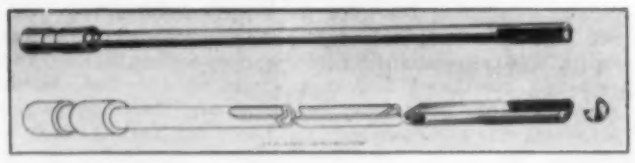
The head threads into place

Nupla Drive Punch designates a new plastic faced drift with which to make press fits on bearings, bushings and to assist in assembly work. The steel shank of the drift can be hammered to drive the soft faced head forward without marring the work. Five sizes range from ¾ to 1½ in. in diameter. They are available singly or in sets.

If you write maker identify as IEN-1049

DRILLING . . Carbide tipped tool, to 1½ in., gun type for deep holes

Source: CHICAGO-LATROBE
409-13 W. Ontario St., Chicago 10, Ill.



The work rotates

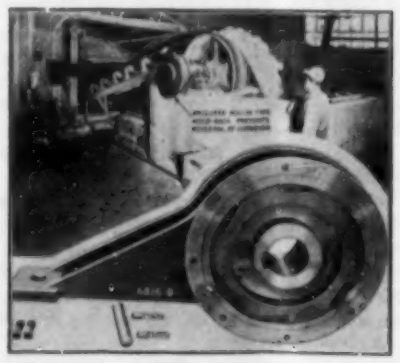
New line of carbide tipped gun drills has been added to the company's line for use in deep accurate hole drilling. The new units are manufactured to user's requirements and are not carried in stock. Sizes range from 19/64 to 1½ in. in diameter.

Coolant feeds through the hollow shank to issue at the drill end and then feed back carrying chips with it. Contour of the drill assists in guiding it to produce a straight hole. Machines particularly designed for this type of tool are recommended.

If you write maker identify as IEN-1050

CONVEYING . . Roller type hold back prevents reverse conveyor movement

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway Ave., Aurora, Ill.



Bulletin 444-X

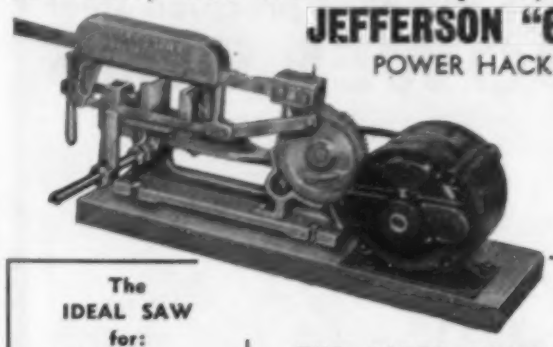
Torque rating is to 350,000 in. lb. and maximum bore is to 7 in. for this new hold back unit. It represents further development of the hold back, previously described IEN-1274-51. It applies on the head end shaft on an upward inclined belt conveyor. The rollers in the assembly wedge against the outer cylinder if the shaft on the conveyor attempts to reverse. Pressure springs and plungers make certain of instant roller engagement. Free release accompanies resumption of normal forward movement. Application is on belt conveyors and bucket elevators.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1051

The Little Saw With The Big Capacity

JEFFERSON "601" POWER HACK SAW



The IDEAL SAW for:

- Machine Shops
- Welding Shops
- Implement Shops
- Garages
- Hobby Shops
- Service Stations
- Blacksmiths
- Plumbers
- Electricians
- Farmers
- Steamfitters
- Maintenance Men

THE LARGE VARIETY OF USES PUTS THIS HANDY SAW IN BIG DEMAND GROUP

This little saw does a truly big job with precision accuracy and dependability. It cuts all metals including steel, brass and aluminum. It will handle up to 3½" x 3½" stock—square, round or pipe. Standard equipment includes a swivel vise which mitres up to 45°, and a sturdy gauge bar for uniform length of cut stock.

. . . and, IT SELLS FOR ONLY **$71.50** including motor, F.O.B. Eau Claire, Wisconsin.

Write today and let us send you complete information and details.

Sales Service Machine Tool Co. SSMT

PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS

2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN-1052

LOXSWITCH TRADE MARK

the guaranteed

LIMIT SWITCH

Want Technical proof of superior performance?

- Long life
- Contact pressure
- Operating pressure
- Over travel
- Fast Break

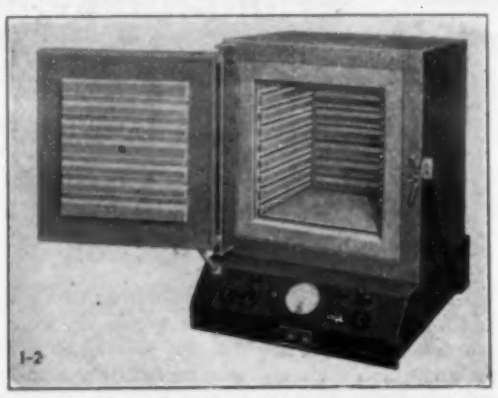
Write for Technical Sheet T53A

R. B. DENISON MFG. CO.

4220 Hough Ave. Cleveland 3, Ohio

If you write maker identify as IEN-1053

Dyna-Trol Electric Furnace



Infinite **TEMPERATURE CONTROL UP TO 2000° F. & 2300° F.**

ZONE Temperature CONTROL — Temperature INDICATION

SEMI-AUTOMATIC
- Maintain Temperatures Accurately
- Duplicate Production Time-Temperature Cycles
- Duplicate Temperature Gradients by Zone Control
- Zone Temperature Indication by Pyrometer Selector Switch

AUTOMATIC
- Semi-Automatic Control Features Combined with Fully Automatic Hold and Cut-off Indicating Type Instrument

Prices Start at $165.00 — 40 Standard Models

Write for Complete Literature

INDUSTRIAL DIVISION

L&L MANUFACTURING CO.
CHESTER 30, PA.

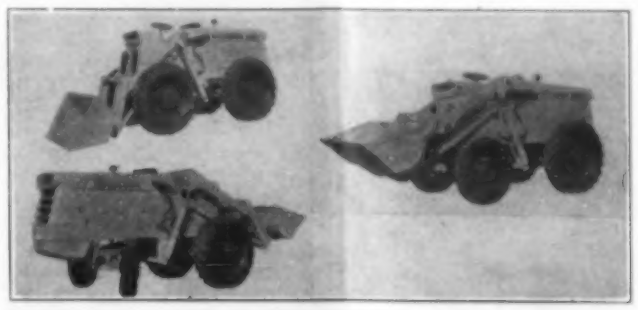
If you write maker identify as IEN-1054

If you write maker identify as IEN-1055

If you write maker identify as IEN-1057

HANDLING . . Power shovel, tractor mounted, 5/9 to 2¼ cu. yd.

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.



Specifications upon request

Three designs and six models are included in the company's new Michigan tractor shovel line for construction work and bulk materials handling. Designs include two-wheel drive with the driving wheels at the bucket or engine end and four-wheel drive with steering at the engine end. The smallest unit in the line mounts a 15 cu. ft. bucket. The largest machine has capacity for 2¼ cubic yards.

Construction includes the company's standard design of torque converter drive with forward and reverse control at two levers on the steering column and with high and low over-drive control at a third lever for operating speed to 28 miles per hour. Planetary reduction gears in the outer wheel hubs provide a 3.2 to 1 ratio to minimize torque load on the axles. Steering boosters are standard equipment.

If you write maker identify as IEN-1058

PRINTING . . Chemical solutions transparentize and seal master prints

Source: C T S PROCESS
530 Midvale Road, Dept. IEN, Upper Darby, Pa.

Technical data upon request

Opaque prints, drawings, photostats and records that have been printed, typed, drawn with pencil or carbon paper on opaque paper stock can be transparentized and sealed and then employed as satisfactory masters for contact printing and reproduction. Translucent papers and linens can be improved in transparency. Soiled masters and drawings can be cleaned to improve legibility and printability. Pencil lines can be removed from linen and paper records without smudging or leaving ghost marks. The solutions also apply to prevent tampering with or altering documents and records without detection.

Application is by a wiper cloth roller or spray to the rough uncoated or reverse side of any one sided paper subject for the transparentizing operation. It is applied, with care, to the face of a drawing or tracing to loosen or dissolve dirt. Volatile portions of the solution evaporate until the treated sheet is dry. Then the second sealing solution is applied to the back or side opposite the written or printed matter, unless no further changes are contemplated on the face.

A third solution is available that combines both the transparentizer and sealer for use where it is not necessary to retain the original subject after treatment. This third solution dries quickly and seals thoroughly on the face of a drawing or tracing so it is not possible to make a change following the application without showing ghost marks. Single gallons of the cleaner transparentizer solution lists at $11. Single gallons of the sealing solution are $9. Combinations including a gallon of the cleaner transparentizer and a quart of the sealer list at $12.50.

If you write maker identify as IEN-1059

ASSEMBLING . . Rotary table feeds plastic work for heat sealing

Source: RADIO RECEPTOR CO.
251 W. 19th St., Dept IEN, New York 11, N. Y.

Available to order

New work table has been developed to obtain maximum productive capacity of the company's electronic Thermatron press and generator in heat sealing plastic materials. The table mounts a number of stations to be loaded by one or more operators to index, one station after another, under the operating head of the machine. A timer controls the dwell interval. The movements are tied in between the machine and table so the two operate in automatic sequence.

Interlocks prevent closing the power circuit until the machine head is down in sealing position. The head cannot close unless the work is in correct position. The table cannot index until the head moves up. Table sizes range to 60 in. in diameter with 4 to 24 stations. The machine and table can make a maximum of 30 operations per minute.

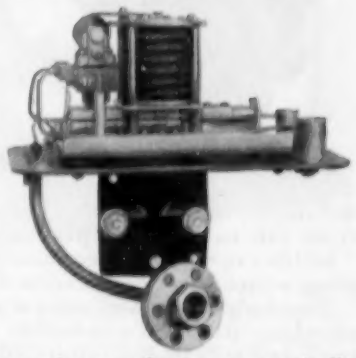
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1060

If you write maker identify as IEN-1061

SHORT RANGE SPANS, HIGHLY SENSITIVE

The Taylor TRANSAIRE* Pressure Transmitter!



Designed to measure and transmit pressure changes up to 1,000 ft., it is accurate to ½% of the selected short range span and sensitive to pressure changes of ½" water.

- *Short range spans available 20 to 40 psi. throughout range limit of 35 to 415 psia, and 50 to 100 psi. throughout 100 to 1,000 psia.*
- *Suppressed ranges throughout pressure limits.*
- *Volumetric type pressure system is extremely accurate, practically clog-proof, has corrosion resistant 316 stainless steel diaphragm.*
- *Temperature and barometric compensation for higher accuracy of measurement and control.*

Ask your Taylor Field Engineer, or write for **Bulletin 98097.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

*Reg. U.S. Pat. Off.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN-1062

GUARDIAN Relays

Guardian Relays do "stop and go" duty all along the nation's highways, guiding motorists safely. For those who "run the light" Guardian Relays come to the rescue operating X-ray and physio-therapy equipment. Insurance companies and other business concerns use automatic business machines controlled by Guardian Relays. And so continues the unbroken line of control applications including: starting—stopping—timing—counting—computing—sorting—lighting—conveying—interval timing—flying—navigation—radar—armament and power. Send blueprint of your control application. Write.

GUARDIAN ELECTRIC
1620-A W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN-1063

NOW!

A SAFE, FAST PRODUCTION VISE

SAFE—Both Hands Free To Guide Work

Studebaker Hydraulic SPEEDVISE

For fast and accurate production • Pressures to 7½ tons obtained with easy strokes on a foot operator • Ideal for operations such as assembling, forming, punching, presswork, cutting, straightening and bending—all vise jobs.

Write for bulletin No. 54

Studebaker MACHINE COMPANY

1235 South Ninth Avenue • Maywood, Illinois

If you write maker identify as IEN-1064

PORTABLE STRAPPING REEL

● You can easily move this Brainard steel strapping reel from job to job and speed up packaging operations.

Holds a standard size continuous coil of tensional strapping, which is easily placed in demountable coil holder.

Tray holds tools and seals within convenient reach of operator. Brainard's complete line of steel strapping, tools and accessories covers all packaging, carloading, palletizing, bundling, export crating and warehousing requirements. Write for illustrated catalog.

Brainard — STEEL DIVISION SHARON STEEL CORPORATION

For Catalog write:

BRAINARD STEEL DIVISION
Griswold Street, Dept. 11-1
Warren, Ohio

If you write maker identify as IEN-1065

thousands of users PROVE "HI-TEMP" C-5 THREAD COMPOUND IS BEST FOR ALL STUD THREADS and STAINLESS STEEL APPLICATIONS

✔ speeds up dis-assembly time
✔ prevents stud breakage
✔ eliminates pitting of stainless steel

NO MORE FROZEN OR GALLED STUDS ...EVEN AT 1800°F

Let us SEND you a **FREE SAMPLE** so you can PROVE to YOURSELF that C-5 will lick your toughest stud breakage problems!

To assure easy maintenance on products having threaded assemblies many leading product engineers have specified the use of Fel-Pro C-5 as an anti-seize coating on stud threads prior to final production line assembly.

Fel-Pro's exclusive Colloidal-Copper formula allows for easy separation and reduces stud breakage of threaded assemblies after long exposure to extreme temperatures. It eliminates pitting of stainless and alloy steel even where dissimilar metals are joined.

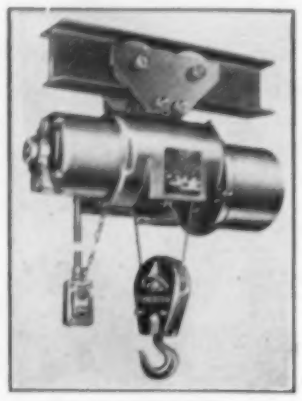
Conduct your own tests with C-5 "Hi-Temp" at our expense. Write for Free Sample and complete data sheet TODAY!

FELT PRODUCTS MFG. CO. 1523 Carroll Ave., Chicago 7, Ill.

If you write maker identify as IEN-1066

HOIST . . Drum type electric, ¼ to 2 ton, standard lift to 18 feet

Source: NATIONAL SCREW & MFG. CO.
2440 E. 75th St., Dept. IEN, Cleveland 4, Ohio



Bulletin E-853

The motor driving this new Model-E hoist is a totally enclosed weather tight and dust proof ac. induction unit. It operates a triple gear reduction with its built-in spring clutch load brake enclosed to operate in oil. It is controlled by pendant push button and contactor. Shafts are mounted on sealed pre-lubricated or splash lubricated ball bearings. In addition to the Weston mechanical brake, a shoe type solenoid brake holds the load when the motor circuit is opened. A limit switch reverses the motor and lowers the load to prevent jamming the drum if the operator does not stop the hoist.

The line includes four sizes ranging from ¼ to 2 ton. The motor can be specified single phase for operation on 110 or 220-volt or polyphase for 220 to 550-volt 60-cycle ac. Hoist speed is 15 or 30 fpm. on the ¼ to 1-hp. units and on the 1 and 2-ton assemblies. It also can be specified at 38 or 19 fpm. when the hoist is equipped with a 1¼-hp. motor and load rating is ½ or 1 ton.

Standard lift is 10 ft. with maximum lift at 20 ft. to employ overwind on the drum. The 1 and 2-ton units also are available for 18-ft. standard lift or 25-ft. maximum lift. The load block and hook are equipped with anti-friction load and swivel bearings. Wire rope size ranges from $\frac{3}{16}$ to ⅜ inch. Trolley, hook or stationary lug mounting are available.

If you write maker identify as IEN-1067

ADHESIVE . . Potassium silicate binds phosphors to cathode ray tubes

Source: PHILADELPHIA QUARTZ CO.
Public Ledger Bldg., Dept. IEN, Philadelphia 6, Pa.

Technical data upon request

Kasil No. 22 trade names a new potassium silicate that is supplied as a clear solution. It is employed with soluble salts, for dehydrating, such as barium acetate, barium nitrate, to bind phosphors to the face of cathode ray tubes. The material is characterized by the absence of copper, nickel and other elements that might contaminate a screen.

If you write maker identify as IEN-1068

GENERATOR . . Motor driven assembly to supply 400 cycle three phase ac.

Source: KATOLIGHT CORPORATION
622-26 N. Front St., Mankato, Minn.

Revolving field design

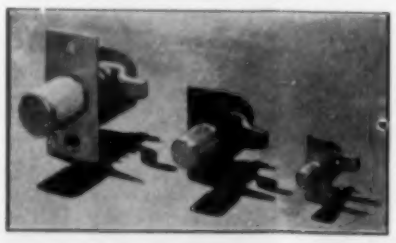
Three phase generator, rating 30 kva. with a direct attached 125-volt dc. exciter, is shaft mounted with a 50-hp. 110/220-volt ac. motor in this new high-cycle unit. The three-phase motor operates at 1,714 rpm. Inherent regulation is about 35 per cent with approximate frequency change, between partial and full load, at 2½ per cent.

The assembly measures about 47 by 23 by 23 in. and weighs 1,275 pounds. A voltage regulator can be added to hold the output voltage within 2 per cent between no load and full load.

If you write maker identify as IEN-1069

FASTENING . . Rotating latch for use on doors, panels, cover plates

Source: SOUTH CHESTER CORP.
Dept. IEN, Lester, Pa.



For built in use

Three sizes and three head styles are now included in the rotating latch, previously described IEN-5452-53. Adjustable Pawl Fastener is the designation. The assembly is available with an adjustable pawl that tightens or loosens contact with the door jam, upon an additional turn or two on the head, and a fixed pawl which is preset at installation to a desired contact gap and tension. Knurled knob or T-bar head can be specified. There is also a slotted flush head for screw driver operation. A gasket makes the fastener water tight when this construction is required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1070

Ferguson FUEL OR ELECTRIC FURNACES

The Ferguson Unitline illustrated is just one example of the many new types of furnace equipment developed by the Ferguson Equipment Corp. The unit is a completely self contained continuous heat treating unit which can be placed directly in a production line or in the heat treat department. The unit is suitable for hardening or carburizing and the quench, wash, rinse and draw operations are automatically performed in the same unit in less than half the floor space required by separator units.

Your inquiry will be welcome whether for a special production problem or in a standard furnace.

FERGUSON EQUIPMENT CORP.

Industrial Heat Treating Equipment

21st Street and Penn Avenue • Pittsburgh 22, Pa.

If you write maker identify as IEN-1071

REMOTE STEM

TEMPERATURE CONTROLS FOR OUTDOOR-INDOOR OR EXPLOSIVE ATMOSPHERES

Bourdon Tube Power Element—Visible Calibrated Dial
Fully Adjustable As To Range And Sensitivity
External Adjustments

Mercoid Remote Stem Temperature Controls are available in ranges varying from minus 30°F. to plus 60°F. to 370-530°F. in the sensitivity and circuit arrangement your application requires.

Bulb and capillary tubing are available with special construction to meet various industrial needs.

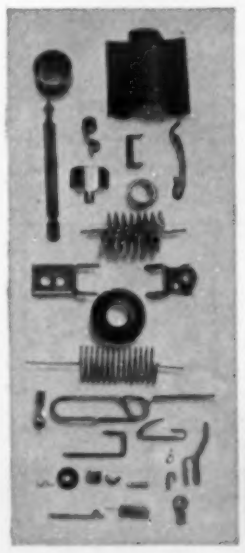
Equipped with the Mercoid Sealed Mercury Contact—unaffected by dust, dirt, grease or corrosion.

WRITE FOR BULLETIN NO. 30

THE MERCOID CORPORATION
4201 BELMONT AVENUE, CHICAGO 41, ILLINOIS
New York, 205 East 42nd Street • Philadelphia, 317 North Broad Street

If you write maker identify as IEN-1072

Priced Right! WIRE FORMS & *Metal Stampings*



High-speed, quality production with custom-made precision. Wire formed to any shape for every need.

WIRE FORMS
.0015 to .125 diameter

STRAIGHTENING & CUTTING
Perfect straight lengths to 12 ft.
.0015 to .125 diameter

SMALL METAL STAMPINGS
.0025 to .035 thickness
.062 to 3 inches wide

Specializing in Production of Parts for Electronic, Cathode Ray Tubes and Transistors

Write for illustrated folder
Send Blueprints or Samples for Estimate

ART WIRE and STAMPING COMPANY
2-G BOYDEN PLACE
NEWARK 2, N. J.

If you write maker identify as IEN-1073

You Will Reduce Cost of DRUM and BARREL HANDLING

One man, without help, easily handles containers weighing up to 800 pounds. You save the cost of helpers, and time, when you use a

SABIN BARREL TRUCK

Loads are picked up automatically. You simply run the truck up to container, hook on at top, and pull back on handle—that's all.

Third Wheel Feature provides better balance and added safety.

Write for Bulletin No. 48-A.

THE SABIN MACHINE CO.
6540 Carnegie Ave., Cleveland 3, O.

If you write maker identify as IEN-1074

FIRST LINE OF DEFENSE AGAINST...

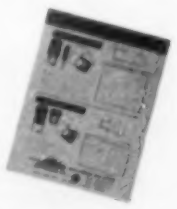
S.S.WHITE
ELASTOPLASTIC PLUGS AND CAPS

When you invest money in an expensive part or piece of equipment, it's just good business to protect your investment against needless damage during shipment and storage. And one way to do this—at minimum cost—is with S.S.White Elastoplastic Plugs and Caps. These inexpensive flexible plastic plugs and caps are designed to cover or seal important openings or studs. They keep dirt and moisture out of interior parts—protect the protruding ends of tubing and studs against damage—and seal in hydraulic fluids.

Besides being low in cost, S.S.White Elastoplastic Plugs and Caps are easily applied and removed—they're unaffected by oil, grease and gasoline and are available in a wide range of sizes for every need.

WRITE FOR BULLETIN P-5312

It has full details on S.S.White Elastoplastic Plugs and Caps. Sample plugs and caps can also be furnished on request.

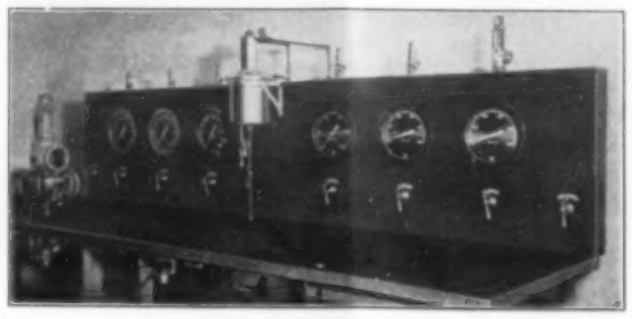


THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.
Western District Office • Times Building, Long Beach, California

If you write maker identify as IEN-1076

TESTING . . Hydraulic booster multiplies pressure from plant source

Source: MARTIN-DECKER CORPORATION
3435 Cherry Ave., Long Beach 7, Calif.



Complete test bench is illustrated

Illustrated is multiple assembly of the company's new hydraulic pressure booster to provide test pressures of 5,000 or 10,000 lb. based on plant pressure of 150 lb. or 25,000 lb. on plant pressure of 225 pounds. This hydraulic pressure can be employed for test purposes on hydraulic manifolds, valves, fittings, and for instrument calibration.

A setup employs one or more of the boosters, accompanying connections for the equipment to be tested, with control valves and pressure gages. The booster itself is a duplex cylinder assembly in which the two cylinder diameters provide the difference in pressure on the input and output sides. The cylinder pistons are packed with low friction seals to prevent leakage so a test pressure can be held, providing the unit being tested does not leak.

If you write maker identify as IEN-1077

CONTAINER . . Rubber fabric drums, 55 to 2,500 gal., collapse when empty

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., New York 20, N. Y.

Air tight, vermin proof

Cord fabric and synthetic rubber are molded into one piece and are reinforced with flexible lifting cables terminating in lifting rings in the two ends of this new 2,500-gal. collapsible container. It measures about 8 ft. in diameter by 8 ft. in height and has a 6-in. closure in each end. It weighs about 670 lb. or 1⅓ lb. per cu. ft. of capacity. It represents addition to the company's line of smaller rubber fabric drums, previously described IEN-5455-51. It is particularly designed to handle free flowing powdered and granular solids.

The interior and exterior are neoprene for resistance to aging, weathering, abrasion and temporary contact with oils and corrosive chemicals. Five full containers fill a 40-ft. gondola car. Forty-three collapsed containers can be shipped in a 40-ft. box car.

The container can be inflated, from collapsed position ready for filling, by removing the top closure and lifting. It is held in upright position and then is filled through the top opening by conventional means. Vibrating can be employed to assist in compacting materials of low apparent densities.

The container can be pressurized, through an air valve provided in the closure plug, to 1½ lb. for additional rigidity during handling. An inert gas can be used to protect materials that are sensitive to air. Emptying is through the central bottom closure by vacuum or gravity assisted by a vibrator if necessary. Empty containers collapse readily. Then the closures are inserted and tightened to prevent re-expansion upon handling by hoist, crane, fork lift or truck.

If you write maker identify as IEN-1078

BUILDING . . Translucent sheet for windows, skylights, partitions

Source: RESOLITE CORPORATION
Route 19, Zelienople, Pa.

Unbreakable

V-beam designates a new corrugated design that has been added to the company's line of translucent Fiberglas reinforced polyester resin sheets, previously described IEN-9917-51. The new corrugations nest with those of protected metal roofing and siding sheets for wide purlin and girt spans. The wide corrugation provides good run-off capacity for rain on low pitch roofs when the sheet is used to admit light there as well as to form an integral part of the roof covering.

Pale green, ice blue and semi-clear are three standard colors in which the sheet is available for skylights and for side wall glazing, particularly on industrial buildings. No flashing, caulking or special framing is required. The sheet is shatter proof and is not subject to attack by weathering or exposure to heat, cold, moisture and normal industrial fumes.

Standard length is to 12 feet. Overall width is 29 inches. Coverage width is 26½ inches. The corrugations are pitched on 5.3-in. centers and measure 1¾ in. in depth.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1079

Add an Acme Steel 25-pound coil holder
to your present wire stitching equipment

Stitch 2½ times longer without stopping

The rugged new Acme Steel 25-pound coil holder means less down time on your wire stitching operations, both because it holds 2½ times as much wire as the conventional 10-pound coil holder, and because it's easier and faster to load. Features are tangle-free wire feed and positive shoe-type brake. For details, write Acme Steel Products Division, Dept. IEN-14. Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

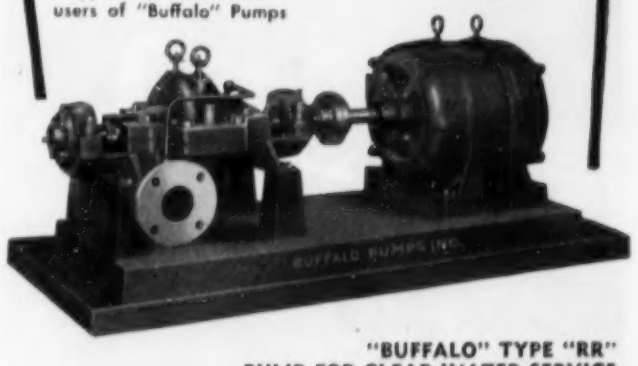
STITCH IT... STRAP IT... SHIP IT... SAFELY!

ACME STEEL

If you write maker identify as IEN-1080

"Here's a Pump You Never Have to 'Baby'!"

Typical comment from users of "Buffalo" Pumps



"BUFFALO" TYPE "RR" PUMP FOR CLEAR WATER SERVICE

If you want a pump for general service or boiler feed, look into the rugged "RR"! You'll like its modest first cost, its high efficiency (even at heads up to 1500'), its easy maintenance—but most of all, you'll like its year-after-year endurance. That's the true money-saver in a pump! Better write for Bulletin 980 now and see why so many "Buffalo" users are enthusiastic. Pick your capacity. 2 and 4-stage models, up to 900 gpm.

BUFFALO PUMPS, INC.
496 Broadway Buffalo, New York
Subsidiary of Buffalo Forge Company
Canadian Pumps Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN-1081

AIR POWER—
WHAT YOU WANT . . . WHEN YOU NEED IT
WAYNE *Job-Engineered* COMPRESSORS

EVERY "air job" in your plant has minimum and maximum demands, present and future capacity requirements. That's why you need a Wayne Job-Engineered Air Compressor. This matching of compressor to the specific job is "job-engineering." Your individual needs as to air pressure and output, and frequency of operation determine the proper Wayne Compressor for you. Each Wayne "Job-Engineered" Air Compressor carries a guarantee of its pre-tested, full rated usable air power. This is your guarantee of all the air you need for all your operations.

- EXTRA COOLING
- HIGH EFFICIENCY
- POWER ECONOMY
- EASY SERVICING

Write for data on "How to Choose an Air Compressor"

THE WAYNE PUMP CO.
Salisbury, Maryland
Toronto, Canada

Wayne
NATION WIDE SERVICE

If you write maker identify as IEN - 1082

AVAILABLE FROM STOCK FOR **IMMEDIATE** DELIVERY

acrylic rods and tubes

SIZES AVAILABLE
RODS
1/8"
3/16"
1/4"
5/16"
3/8"
7/16"
1/2"
9/16"
5/8"
11/16"
3/4"
7/8"
1"
1-1/8"

TUBES
1/16" wall
1/4" O. D.
3/8" "
1/2" "
5/8" "
3/4" "
7/8" "
1" "

CLEAR CRYSTAL METHYL METHACRYLATE Rods and tubes for industrial novelty display, models and all other fields

Write for price lists and samples today

ACE HIGH QUALITY

ACE PLASTIC COMPANY
Precision Extruders and Fabricators

91-24 Van Wyck Expressway • Jamaica 35, N. Y.

If you write maker identify as IEN - 1083

PROTECTOSEAL

Exposed flammables are a constant, potential hazard. They are extremely volatile and give off vapors which are readily ignited by a chance spark. Insurance companies insist the flammable liquids in plant use be contained in Approved Safety Cans.

SAFETY CANS
by Underwriters' Laboratories and Associated Factory Mutual Fire Insurance Cos. Laboratories.

APPROVED

Pressure Relief. Spring-loaded cap is mounted on a ball and socket joint to automatically make a tight complete closure. This prevents loss by evaporation and leakage when can is inverted. Squeeze-grip handle is wide, comfortable; opens spout when held for pouring; gives complete control without strain or effort.

APPROVED

Fire Preventive Baffle located inside base of spout. Fire baffle is a double concentric, perforated metal cylinder which quenches flame and prevents it from igniting contents.

APPROVED

Sturdy, electrically seam welded body reinforced by beading. Designed with broad, substantial, even base that guards against accidental tipping. Should can tip, however, no leakage can occur because of tight closure.

DEMAND THESE FEATURES for complete plant and worker protection. No "Safety" Can is really safe without all these fire protective safeguards. Not one can be eliminated without endangering lives and property.

A complete Line of Plant Fire Protective Flammable Safeguards

Protectoseal designs and builds fire protective units for every place where flammables are stored and used—for production processes, storage, transfer and general plant use. Write today for Catalogs, Price List and detailed information.

In Canada: Safety Supply Co.

Visit our Exhibit Booth 901
Plant Maintenance Show • January 25-28 • Chicago

Fill in Coupon and Attach to Company Letterhead

The Protectoseal Company
1966 S. Western Avenue, Chicago 8, Illinois

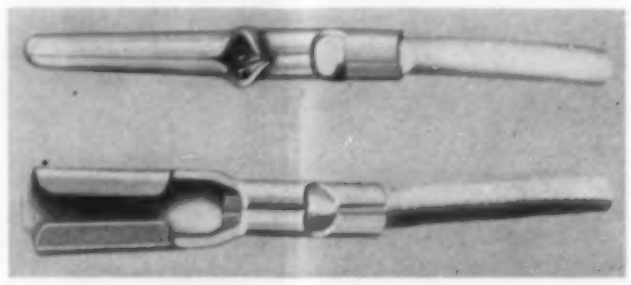
Send us the informative literature checked below:
☐ General Plant and Laboratory Container Catalog
☐ Catalog of Vents and Fittings for Bulk Storage
☐ Self-Checking Charts for Flammables

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 1085

CONNECTOR . . Tapered plugs and sockets for use in small space

Source: AIRCRAFT-MARINE PRODUCTS INC.
2102 Paxton St., Harrisburg, Pa.



For high speed application

Solderless self-locking taper pins, with mating receptacle, and solderless taper tabs and receptacles have been added to the company's line of electric connectors for multiple application in confined areas. The terminals are supplied tandem mounted in strip form on reels for automatic application to wire by equipment that is covered in the purchase price of the terminals themselves. Connections can be made and broken between the pins and the tabs and their receptacles without loss of time. The pins are hardly larger in diameter than the insulated wire to permit close spacing.

Typical applications are in telephone main frames, stepping switches and relays, outdoor cable terminals and plug-in lightening arresters, antenna and speaker disconnects, transformer tabs, switches on electric clocks and timers for connection to radios.

If you write maker identify as IEN - 1086

CORROSION PROOFING . . Aluminum in plastic vehicle for metal surfaces

Source: EMJAY MAINTENANCE ENGINEERS
327 Union Ave., Dept. IEN, Rutherford, N. J.

Technical data upon request

Kolmetal trade names a new surface protecting liquid composed of pulverized aluminum in a plastic vehicle. Application is similar to painting. Two coats are recommended with a 4-hr. drying interval between them. The film air-hardens to a plastic bonded aluminum surface. It can be polished, ground, drilled or bent to a 45-deg. angle without chipping or cracking.

The dry film is resistant to attack by corrosive atmospheres or sea water. It is inert to many foods, beverages and liquid products. It is recommended to protect the interiors of tanks or the exteriors of acid cooling coils since it is a good heat conductor. It is suited also to protect structural iron and steel, ducts, piping, industrial equipment.

If you write maker identify as IEN - 1087

MOTOR . . Geared head construction, explosion proof design, ¼ to 3 hp.

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058-A, Terminal Annex, Los Angeles 54, Calif.

Safe anywhere

Cantilever design to protect gear alignment in which mounting stresses are absorbed by the one piece base characterize the construction of this new Type SESV-GW right angle Syncrogear motor. The unit employs splash lubrication, a hardened and ground worm, normalized castings and asbestos protected windings. The explosion proof construction complies with underwriter's specifications for Class I-Group D and Class II-Groups F and G service. Sizes range from ¼ to 3 hp. with output speeds at 20 to 155 rpm. and ratio maximum at 58 to 1.

If you write maker identify as IEN - 1088

TESTING . . Portable potentiometer for use in laboratory and field

Source: WILLIAMSON DEVELOPMENT CO.
317 Main St., Dept. IEN, West Concord, Mass.

Removable cover

Model HF1 designates a new portable potentiometer with a range of 0 to 100 millivolts and accuracy to 0.1 millivolts plus 0.15 per cent. The instrument employs a galvanometer that need not be locked in transit to prevent damage. The auxiliary current source is a flash light cell. The battery switch turns off when the cover is closed. The EMF Standard is an Eppley unsaturated cell. Assembly is in a natural oak case. Weight is a little over 9 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1089

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS

SINTRLOY — DUCTILOY — SEALALOY

SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY—An extremely tough bearing material that is actually malleable and has a high resistance to shattering. Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

"National's widely experienced engineering and design departments are always at your service to help you with parts that must be specially designed to their particular application.

NATIONAL MOLDED PRODUCTS, INC.

1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN - 1090

BIGGEST OUNCE OF PROTECTION

Grafo

A spray for your forging dies. Prevents sticking and galling; permits easier flow of metal; gives better finish on the forging; permits forging to closer tolerances and generally eliminates the necessity for grinding to specifications.

Reduces die wear, tearing and rippling. On hot dies a dispersion of "GRAFO" colloidal graphite in petroleum oil, water and other liquid mediums leaves a dry grafoid surface having a low coefficient of friction that functions under extreme heat far above the point where petroleum lubricants are completely destroyed.

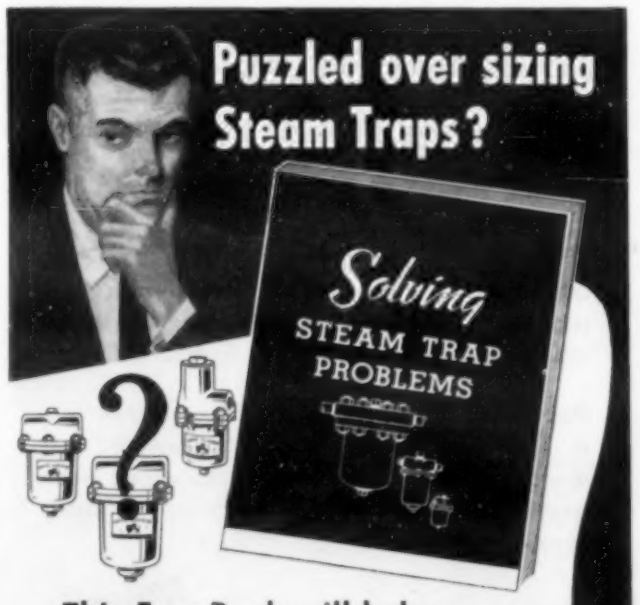
Write us regarding your special applications. Our engineers will be glad to study your problems.

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

299 WILKES PL.
SHARON, PENNSYLVANIA

If you write maker identify as IEN - 1091



This Free Book will help you

This book is a real help in sizing steam traps. It takes you through the necessary steps in determining the right steam trap for your needs. It gives air handling considerations, allowances for peak loads, cautions and recommendations, standard practice hints, notes and drawings on installations, maintenance suggestions, other helps and tips. Would you like this kind of help? Then send for your free copy today.

THE V. D. ANDERSON COMPANY
1931 West 96th Street • Cleveland 2, Ohio

SUPER-SILVERTOP Steam Traps

If you write maker identify as IEN-1092

NEW NAGLE PUMPS

to lower your costs of handling Abrasive, Corrosive, Thick or Hot Liquids!

Type CWS-C vertical shaft pump (with submerged bearing)

Type CWO-C vertical shaft pump (with cantilever shaft—no submerged bearing)

Type CWO-C vertical shaft pump with tailpipe

- Get the facts on this new series. Learn how they can cut your costs!

TYPE KC HORIZONTAL SHAFT PUMP

NAGLE PUMPS, INC.

1243 CENTER AVENUE, CHICAGO HEIGHTS, ILLINOIS

NAGLE PUMPS

PUMPS FOR ABRASIVE AND CORROSIVE APPLICATIONS

If you write maker identify as IEN-1093

Headquarters for

ALMCO Supersheen SPEED FINISHING

BARREL FINISHING

COMPOUNDS

40 DIFFERENT COMPOUNDS

Almco Supersheen's large family of barrel finishing compounds is made up of many separate compounds—each for a specific type of barrel finishing process.

Now it is possible for you to select an Almco compound that is developed for a specific metal and will produce much superior results to that obtained from ordinary general purpose compounds.

CONSTANT RESEARCH AND DEVELOPMENT

Research and development work on various types of chemical compounds is continually underway.

Special compounds are designed and developed as custom items for specific uses. A large stock of Supersheen special compounds is always on hand and they are often recommended in cases where they will perform a certain operation in a better manner than the standard compound.

Write for FREE CATALOG

52 pages of money-saving finishing facts. Scores of "before and after" pictures. Learn the latest on new compounds, new finishing equipment. Send for your catalog today.

ALMCO Supersheen

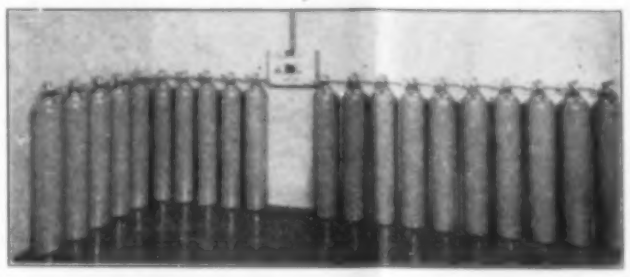
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS

ALBERT LEA, MINNESOTA

If you write maker identify as IEN-1095

FEEDING . . Manifold assembly with controls for compressed gases

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Dept. IEN, New York 17, N. Y.



Cylinders can be added at any time

Series M-20, for automatic change-over from one bank of supply cylinders to another, and Series M-25 for manual change-over between banks, are new assemblies of manifolds, feed lines and central control to regulate the supply of large quantities of compressed gases. Both series are available for any number of cylinders starting with two on each side of the control bank. A metal housing encloses the regulators, pressure gages, relief valves and outlet valves.

Each bank is controlled by its own pressure regulator, high pressure inlet control and low pressure valve. A relief valve is included. The equipment is available for use with oxygen, water-pumped inert gases such as nitrogen and argon, water-pumped air, oil-pumped inert gases or air, high pressure fuel gases such as hydrogen, liquefied petroleum gases such as Pyrofax, butane, propane. The manifolds mount against a wall or on floor supports in any size or shape of room.

If you write maker identify as IEN-1096

TESTING . . Spectrophotometer compares color in sample and standard

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

For routine operation

New design of the company's previously developed recording spectrophotometer is suited particularly to set up standards in controlling the color of paints, dyes, glass, textiles, plastics. The instrument now furnishes the rapid color analysis by drawing a didymium curve in 54 sec. with photometric accuracy of 0.5 per cent and wave length accuracy within 1.0 millimicron. A range of 380 to 700 millimicrons has been provided. The instrument can be operated by a semi-skilled attendent.

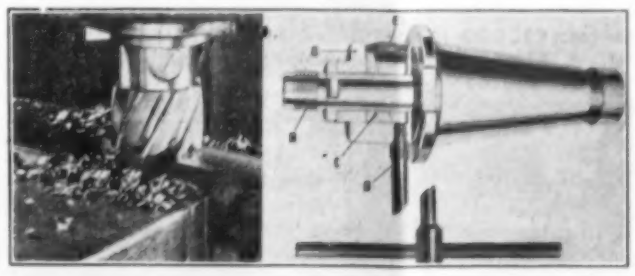
A standard color is placed in one of two holders at the right hand side of the housing and a sample to be tested is placed in the second of the two holders. Recording paper is mounted on the drum at the front and the operator turns on the wave length drive. Immediately the instrument starts to draw its curve on the paper.

The assembly consists of the monochromator, photometer and recorder. The three are enclosed in a housing that measures 45 by 26 by 19 in. and weighs 500 pounds. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN-1097

CHUCK . . Self locking design drives 2 in. to 6 in. milling cutters

Source: CLARKSON INC.
320 Ontario St., Dept. IEN, Toledo 2, Ohio



Promotes cutter setup and change

Dedlock trade names this new milling cutter chuck and also a line of cutters that apply with it. The design permits hand application of a cutter for self-tightening action as soon as the machine spindle brings the cutter into action. It provides for quick loosening for hand removal to change the cutter.

The cutter threads on the plug A to come against the ground back face B. Cutting action forces the cutter tightly against B tending to move A axially against the restraining action of the drift C that passes through a slot in the plug shank. Tightening action on the part of the cutter causes the drift to lock. It is loosened by turning the key D against spring action beneath the retaining cap E. As soon as the drift has been released the cutter can be removed by hand.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1098

60-DAY FREE TRIAL

of America's most popular industrial stool

A tired worker costs MUCH more than a good chair

- 4-way adjustable backrest
- Scroll shaped posture seat
- Tamper-proof tubular all-welded construction
- 3 adjustable height ranges.

Now test Royal's famous No. 515 stool in your own plant without cost or obligation. See why the country's top firms choose it for superior versatility and durability. Write for free trial stool today!

metal furniture since '97 Royal

ROYAL METAL MANUFACTURING CO.

175 North Michigan Avenue, Dept. 201, Chicago 1

If you write maker identify as IEN-1099

LOWER PROCESSING COST!

Grieve-Hendry STANDARD CABINET OVENS

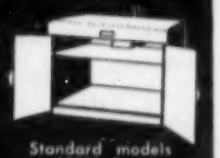
Reduced heat loss, greater efficiency and lower operating costs are possible through an exclusive combination of these Grieve-Hendry features:

- ★ No metal to metal contact
- ★ Double-gasketed doors with heat trap
- ★ 20% more insulation
- ★ Constructed for heavier loads and faster processing
- ★ Designed to include the latest convenience features and safety devices

. . . AND FIRST COST IS LOWER — MADE POSSIBLE BY SIZE STANDARDIZATION.

Specialists in precise temperatures and programmed processing. Write for literature.

DEALER INQUIRIES INVITED.



Standard models to 1000° F.

$89.50 and up

Immediate delivery.

Prompt quotations on ovens built to your specifications.

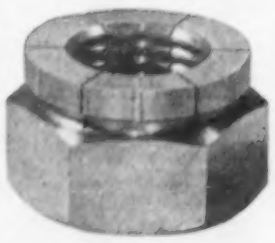
GRIEVE-HENDRY COMPANY, INC.

Export Dept.: 306 W. Washington Blvd., Chicago 6, Illinois

1811 W. Lake Street • Dept. IEN • Chicago 12, Ill.

If you write maker identify as IEN-1100

one standard FLEXLOC SELF-LOCKING NUT



covers temperature range to 550°F

Because they are all metal and require no auxiliary locking device, FLEXLOCs lock and stay tight even at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION sps

JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-1101

looking for a hard-to-get wood screw?

SOUTHERN HAS IT!

The wood screw you want is a standard stock item at Southern Screw Company. Can be shipped in a matter of minutes after your need is known to us.

Flat Round Oval

Phillips or Slotted

Steel Brass Silicon Bronze Aluminum

All made to Federal Specifications FF-S-111a. Wood screws in bulk lubricated free upon request. Write for catalogue. Box 68-E.

SOUTHERN SCREW COMPANY

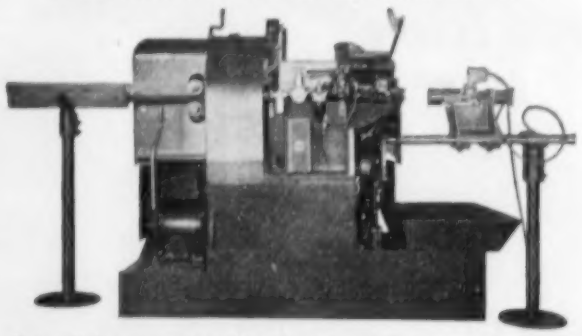
STATESVILLE, NORTH CAROLINA • MANUFACTURER OF WOOD SCREWS

Factory Warehouses:

North Bergen, N. J. • Los Angeles 23, California • Chicago 10, Illinois

If you write maker identify as IEN-1102

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machines—*any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½", .030 wall tubing, 8" lengths, every 2.5 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

These popular time saving machines are now available in 4 sizes, handling work up to 6¾" O.D.

4" THREADED STUDS

Write for Catalog

Cut and chamfered at one time—in 8 Sec.—from 10 ft. length of stock already threaded (4" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily with no extra finishing required.

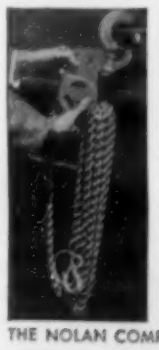
MODERN MACHINE TOOL CO.

JACKSON MICHIGAN

If you write maker identify as IEN-1103

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!



The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN-1104

LIGHTING . . Emergency unit switches to battery on circuit failure

Source: ELECTRIC STORAGE BATTERY CO. Chestnut & 15th St., Philadelphia 1, Pa.

For essential light

Models M and T are new units in the Exide Lightguard line of emergency lighting units for plug-in application in a 110-volt ac. circuit. Normal circuit operation holds a relay open in the unit. The relay closes to connect the unit's storage battery to the 6-volt lights mounted on the housing upon failure in the 110-volt circuit. When service is restored, the relay reopens the battery circuit and resumes charging the battery.

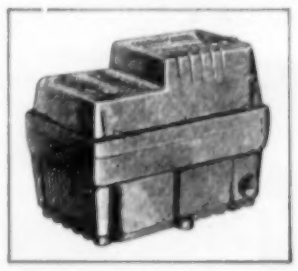
Model M can be set to charge at either a trickle or a high rate by moving a toggle switch on the front panel. Operation can be checked by means of a push button switch to open the 110-volt circuit and close the battery circuit to the lights. Model T employs a modified trickle charger. This unit is tested by disconnecting the 110-volt plug momentarily to cause the lights to turn on.

Standard construction includes one light. Two can be specified as shown in the illustration. The battery is enclosed in a transparent plastic container which makes each plate visible. There is sufficient capacity to operate one light for 8 hr. or two lights for 3 hours. The unit is approved by Underwriters' Laboratories under the revised National Electrical Code.

If you write maker identify as IEN-1105

PUMP . . Motor driven centrifugal operates submerged, 12.5 gpm. at 12 ft.

Source: SUTTON MFG. CO. 112 W. Wilson Ave., Dept. IEN, Norfolk 10, Va.



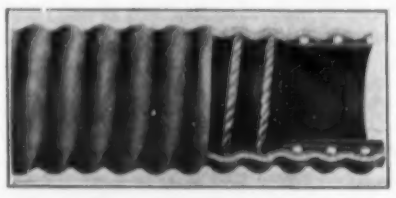
For bilge duty

Model FSA is a new motor driven pump designed to operate continuously under water. Drive is by dc. motor for 6, 12, 24, 32 or 110 volts. Starting and stopping can be manual or automatic. No lubrication is required. Overall height is about 6 inches. Construction is in bronze.

If you write maker identify as IEN-1106

HOSE . . Cord reinforced design recovers shape after being flattened

Source: HAMILTON RUBBER MFG. CORP. P. O. Box 361, Dept. IEN, Trenton 3, N. J.



Sample upon request

Revelation trade names a new smooth bore red covered suction hose employing hard twisted cord as the reinforcement between the inner tube and the outer jacket. It is characterized by its ability to regain its original shape after having been run over or crushed flat. Sizes range from 1 to 3 in. inside. Weight is 75 to 262 lb. per 100 feet. Six lengths are from 10 to 50 feet.

If you write maker identify as IEN-1107

PROTECTING . . Disposable work cap made of neoprene treated kraft paper

Source: RECORD INDUSTRIAL CO. 3301 Arch St., Dept. IEN, Philadelphia 4, Pa.

Economical

Light weight, high wet strength, resistance to attack by acids and alkalis, characterize this new disposable neoprene paper cap. It does not collect dust as quickly as a cloth cap. It is water repellent and is pretreated with a flame retardent. It follows conventional work cap design and is sewn in the same manner as a cloth cap. It employs a leatherette sweat band and has a reinforced visor with cloth piping around the edge. The paper is crepe textured.

Initial development was by DuPont's safety engineers for use in one of the company's chemical plants where some 3,000 workers are required to wear a cap or hat for head protection against dripping acids and chemicals. The majority of these workers now wear the paper caps supplied by the company. Annual savings are expected to run $2,000 or more as compared to the cost of cloth caps previously used.

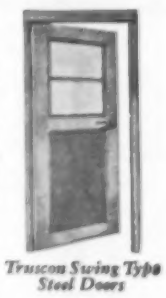
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1108

Strong – Sturdy

TRUSCON INDUSTRIAL STEEL DOORS

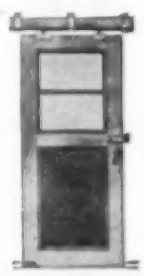
These strong durable units are practically indestructible. They are particularly adaptable for use in basements, rear entrances, boiler rooms, fire exits and similar locations in factories, hotels, apartments, schools, churches, shops, warehouses, filling stations and stores. Swing Type Doors are furnished with heavily reinforced pressed steel door frames, prepared for Truscon standard door hardware.



Truscon Swing Type Steel Doors

Stiles and rails are made of pressed steel tubing with continuous lock seam. All corners are carefully fitted, substantially reinforced, and welded solidly. The large size of the 16 gauge tube, 1¾" x 5", provides approximately 14" of continuous welding around the perimeter — thus insuring permanent rigidity and complete elimination of sagging.

Swing doors may be equipped with either lever latch or cylinder lock hardware. Slide doors have hasp and staple hardware.



Truscon Slide Type Steel Doors

FREE BOOK!

Illustrated literature gives complete details and specifications on Truscon Industrial Steel Doors. Write for it.

TRUSCON® STEEL DIVISION REPUBLIC STEEL

1094 ALBERT STREET • YOUNGSTOWN 1, OHIO

If you write maker identify as IEN-1109

AERO-SEAL WORM-DRIVE HOSE CLAMPS

WON'T SHAKE LOOSE!

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band — hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

One-Hand Installation

Install on Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again

When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

Use of Stainless Steel Subject to Government Regulations

"Aero-Seal"® WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE MARK PRODUCT

BREEZE CORPORATIONS, INC.
41 South Sixth St. Newark, N. J.

If you write maker identify as IEN-1110

for your parts cleaning problems--- a **GRAYMILLS COLD DEGREASER** saves time, cleans better, at less cost

USED BY 3854 PLANTS FOR JOBS LIKE THESE:

- Cleaning dies, tools, etc.
- Flushing machined parts
- Flushing "Hydraulic" parts
- Cleaning bearings
- Cleaning Motors and Electrical Equipment
- Maintenance and Service Work
- Removing Rust Preventatives

THE SAFE, EASY, LOW COST WAY TO REMOVE OIL, CHIPS, GREASE, DIRT and PRESERVATIVES ON JOBS LIKE THIS:

For production, maintenance or service. Use safe, non toxic, low cost solvents. 15 Models. 40 to 300 gallon capcity.

SEND FOR NEW CATALOG

No Installation Headache Portable Too!

GRAY-MILLS

GRAYMILLS CORPORATION

3709 NORTH LINCOLN AVENUE - CHICAGO 13, ILLINOIS
WEST COAST: 4511 MELROSE AVE - LOS ANGELES 29.

If you write maker identify as IEN - 1111

single chain ¼ or ½ ton cap.

miser

WITH YOUR MONEY

double chain 1 ton cap.

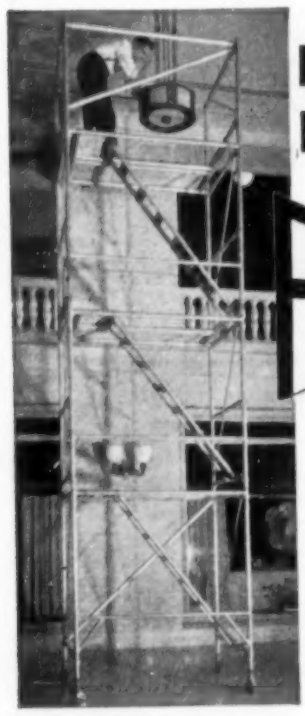
There's a wealth of engineering experience in each R & M *JC* hoist, yet prices start at just $188.00. Big hoist features; unit cast aluminum alloy frame — Weston-type load brake — upper and lower limit switches — heat treated gears and shafts — R & M hoist motor — sealed ball bearings — alloy steel welded link coil chain — forged steel hooks. *Capacities:* 500 to 2,000 lbs. *Speeds:* 34, 17, or 9 f.p.m. *Control:* pendent rope. *Mounting:* hook or Bulldog trolley. For complete details, and address of local distributor, write for Bulletin No. 852. Please mention: INDUSTRIAL EQUIPMENT NEWS

take it up with

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO — BRANTFORD, ONTARIO

If you write maker identify as IEN - 1112



No Acrobatics! No Flip-Flops!

with the

FOLD-A-WAY

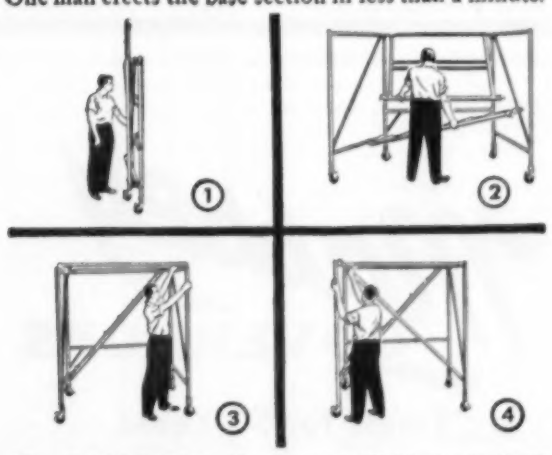
TRADE MARK

SCAFFOLD

ALUMINUM

Underwriters' Laboratories approved

HERE'S WHY: For erection, the end frames of this new aluminum scaffold swing open sideways, as shown below. Maximum swing of any component is 90 degrees, so the erector is always *within* the base area. One man erects the base section in less than a minute.



The FOLD-AWAY Aluminum Scaffold stands freely and will not "fold under" during erection. Superior construction features include coped and *full-welded* joints, adjustable legs with casters that lock at both wheel and swivel.

Write for illustrated Bulletin ASF-1

Aluminum Sectional Ladder Scaffolds

are extremely mobile. 24" width permits use in restricted areas. 6', 8' and 10' spans; ladders 4'3", 5'8" and 6'1" high, slip together easily for desired height. Underwriters' Laboratories approved. Write for Bulletin AS-2.

Gold Medal Ladder Scaffolding

For Greater Safety...Efficiency...Economy

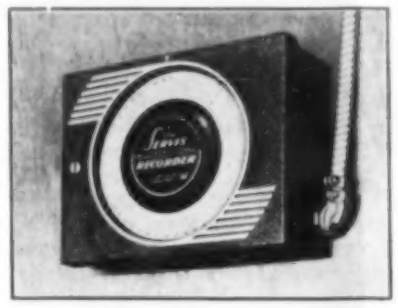
THE PATENT SCAFFOLDING CO. INC.

38-21 12th Street Dept. IEN Long Island City 1, N. Y.
6931 Stanford Ave., Los Angeles 1, Calif.
Branches In All Principal Cities

If you write maker identify as IEN - 1114

TIMING . . Motor driven recorder charts equipment operating intervals

Source: SERVICE RECORDER CO.
1375 Euclid Ave., Dept. IEN, Cleveland 15, Ohio



"M" Servis Recorder

Sapphire stylus marks a wax covered circular chart, on this new motor driven recorder, to show the intervals during which a unit of equipment is in actual operation. The chart provides sufficient radial space outside of its interval markings so a record can be made continuously for three complete revolutions. The 6-in. chart is standard at 24 hr. for one revolution. It is available also in 12 and 8 hr. units.

A mark is made also each time the housing is locked and unlocked. An elapsed time counter is available as an accessory. Operation is by electrical connection to the motor driving the equipment on which the record is to be kept. This circuit actuates the stylus and is independent of the synchronous motor that rotates the chart.

If you write maker identify as IEN - 1115

PUMP . . Motor driven hydraulic tank mounted, pressure to 200 pounds

Source: MODERNAIR CORPORATION
402 Preda St., San Leandro, Calif.

Utility unit

Oil capacity is 2½ gpm. for this new Series-DU hydraulic pump. It employs a 110/220-volt ½-hp. motor with a shaft mounted pump on a 5-gal. reservoir. Overall dimensions are about 12 by 20 inches. Weight empty is 35 pounds. The pump is gear design with needle bearings. The motor operates at 1,725 rpm. Connections are provided for delivery and return of the light hydraulic oil for which the pump is designed.

If you write maker identify as IEN - 1116

CLEANING . . Quick change brush for Hild floor scrubbing machines

Source: HILD FLOOR MACHINE CO.
740 W. Washington Blvd., Dept. IEN, Chicago 6, Ill.

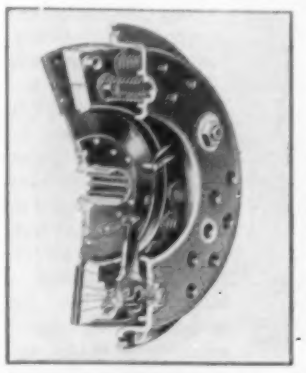
Takes five minutes

Hild Model C and UC machines take a new two-part circular brush for quick economical brush change when the bristles become worn. The bristles are mounted in a laminate block that will not warp or swell and that resists the chemical action of soaps and detergents. The block is secured by 8 screws in the permanent aluminum backing plate that mounts on the machine. Refill blocks can be supplied with palmetto, bassine, mixed palmetto and bassine, steel wire, mixed steel wire and bassine or nylon bristles.

If you write maker identify as IEN - 1117

DRIVE . . Friction disc clutch for application on an engine flywheel

Source: LIPE-ROLLWAY CORPORATION
712 Emerson Ave., Dept. IEN, Syracuse 1, N. Y.



For heavy duty

Type DP is a new non-adjustable direct pressure friction clutch for assembly on an engine flywheel to drive a friction faced hub mounted plate. Pressure is applied, between the flywheel ring and the pressure plate that bears on the friction facing, by three groups of springs. Release levers are mounted between the spring groups to draw the pressure plate back against the springs for drive release.

Single and double plate assemblies range from 12 through 17 in. single and are available in 14 and 15-in. sizes double. Overall torque range is 200 to 1,400 foot pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1118

2,647,680 LBS.

SPEED PATCH

PURCHASED BY FIVE CUSTOMERS

ONE CUSTOMER HAS PURCHASED 1,277,171 POUNDS

FOUR ADDITIONAL CUSTOMERS HAVE PURCHASED A TOTAL OF 1,370,509 POUNDS

Proved THE WORLD'S FINEST, FASTEST FLOOR FIXER

ORDER TODAY!

READY MIXED • NO WAITING • TRUCK OVER EACH PATCH AT ONCE

ORDER TODAY!

ROCK-TRED Corporation

Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN - 1119

Available over the years to Architects, Industrial Engineers, Jobbers and Contractors at every level of field service, WHEELER FIELD SALES ENGINEERING is constantly at *your service* . . . ready to aid you in planning the best Lighting Layout for any standard Commercial or Industrial installation. And for special lighting problems, too, you can rely on Wheeler's unique technical assistance to provide the one best answer to your specific requirements.

Wheeler REFLECTORS

Distributed Exclusively Through Electrical Wholesalers

MADE BY SPECIALISTS IN EQUIPMENT SINCE 1885
275 Congress Street Boston 10, Massachusetts

If you write maker identify as IEN - 1120

SEL-LOK SPRING PINS

won't vibrate loose

Use them as hinge pins, use them to fasten gears, pulleys and sheaves to steel shafting, use them to replace keys, keyways and cotter pins—they won't work loose. For complete information, write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

Sel-lok spring pins are shock resistant and vibration proof • eliminate expensive reaming operations • replace tapered or grooved pins • easy to insert and remove • reusable • accurate in diameter and length • reduce installation costs • lighter in weight and as strong as a solid cold-rolled steel pin of the same diameter • available in a full range of lengths and diameters

SEL-LOK SPRING PIN DIVISION **sps**

JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-1121

Progress - 1893-1954

In 1893, the first PEDRICK BENDER was made. That was during the same era when the costume on the left was in style. Here is the latest PEDRICK PRODUCTION BENDER which is as modern as the costume on the right. PEDRICK PRODUCTION BENDERS are now used for cold bending pipe, tube, reinforcing bars, angles and many intricate structural shapes.

PEDRICK PRODUCTION BENDER prices start as low as $1575.00 for the model "A-3"

Write for descriptive folder.

PEDRICK TOOL & MACHINE CO.

3640 N. Lawrence St. Dept. 7 Philadelphia 40, Pa., U. S. A.

If you write maker identify as IEN-1122

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$36.00**

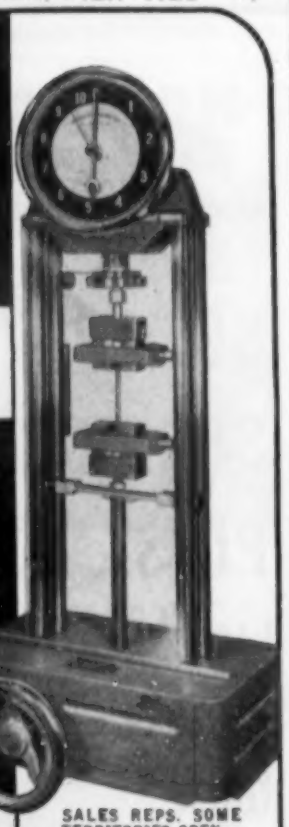
Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN-1123

DILLON *Universal* TESTER



Motorized or Hand Operated

Engineering skill at its highest! COMPRESSION-TENSILE-TRANSVERSE and SHEAR testing combined in one portable instrument.

7 different gauges available—all interchangeable! Capacities from 250 up to 10,000 lbs. Dillon Universal Tester handles rounds, flats or special shapes and—for split accuracy—is calibrated with Proving Ring certified by U. S. Bureau of Standards. Has maximum hand, self-aligning grips, ball bearings. America's most popular low-priced tester! Write for illustrated brochure and FREE Tensile Strength Computer.

W.C. DILLON & CO., INC.
14620K KESWICK STREET
VAN NUYS (Suburb of Los Angeles)
CALIFORNIA

SALES REPS. SOME TERRITORIES OPEN—WRITE.

WRITE FOR LITERATURE AND FREE TENSILE STRENGTH COMPUTER.

If you write maker identify as IEN-1124

CONNECTOR . . Polarized receptacles and plugs for walkie-talkie equipment

Source: H. H. BUGGIE & CO.
726 Staston St., Dept. IEN, Toledo 4, Ohio

Locates on center pin

Number 2411, socket type pressurized design, and No. 2412, plain pin type design, are two new receptacles in the company's line of battery and portable type mating receptacles and plugs. Number 2413 and No. 2611 are the matching plugs. Both sets are designed for 135-volt dc. service. The plugs are equipped with hoods and pull rings. Number 2411 is pressurized to withstand 5 lb. per square inch. It measures 1⅝ in. in diameter by ⅞ in. in thickness and is designed for panel mounting with a spanner ring. Number 2412 has a square flange for panel mounting. It measures ⅜ in. in thickness and has a teflon rear insulator for impact resistance.

The receptacle shells are made of aluminum with gray anodized finish and molded phenolic inserts. The eight contacts are beryllium copper silver plated. The plugs are made of aluminum with black anodized finish and brass pins. The plug pins, in one case, and the receptacle in the other, are made of brass with silver plating.

If you write maker identify as IEN-1125

WAX . . Adhesive backed sheets particularly for use in pattern making

Source: KINDT-COLLINS COMPANY
12657 Elmwood Ave., Cleveland 11, Ohio

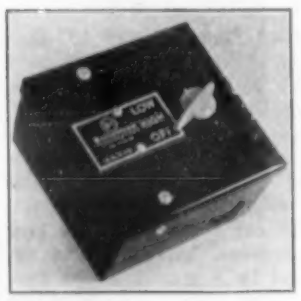
Utility material

Master Sheet Wax is a new form of pattern maker's wax with a self-adhesive backing. Thickness starts at 0.007 inch. Sheet sizes are standard at 8 by 12 in. and 12 by 24 inches. Softening point of the standard wax is about 168 deg. F. Special formulations can be specified with a softening point as high at 270 deg. F. The adhesive backing sticks to any clean surface. The sheet can be used repeatedly if not damaged.

If you write maker identify as IEN-1126

MOTOR CONTROL . . Reactor design for shaded pole motor, 2 or 3 speeds

Source: BALLASTRAN CORPORATION
1701 N. Calhoun St., Dept. IEN, Fort Wayne 7, Ind.



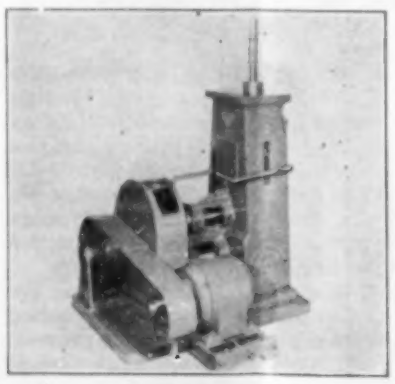
Built to order

New control provides for starting at low voltage and eliminates the possibility of core saturation in a shaded pole motor. The new unit is available in the cased assembly illustrated, which measures 4 by 4 by 2½ inches. It also can be supplied for panel or chassis mounting. It is supplied for each specific application to meet given requirements in motor voltage, current and power at required reduced speed and to fit into a given space. Leads can be provided in any length.

If you write maker identify as IEN-1127

KEYSEATING . . Draw cut machine, keyways to ¾ in., bore to 4½ in.

Source: MITTS & MERRILL INC.
109 S. Water St., Dept. IEN, Saginaw, Mich.



Catalog 534A

New design of the company's No. 0 keyseating machine employs an enclosed housing and rotating shafts mounted on roller bearings. Drive is by a 2-hp. motor for a maximum stroke of 6 inches. Radial outward feed for the cutter is by turning a hand wheel on the housing side. Interchangeable posts apply on the work table for straight and taper bores to a maximum of 4½ inches. Speed is 50 strokes per min. when the full stroke is employed and the motor operates at 1,200 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-1128

Wear Defying

Stay on the Job Millions of Counts Longer

Increased dependability. Greater long run accuracy. Reduced upkeep costs. No wonder progressive cost-conscious plants are switching to Silver Kings.

Built rugged as a bulldozer, Silver Kings operate smooth as a watch. Extra heavy shaft, oversize bearings, life tested parts, all-steel housing, chrome plated finish.

Available in Stroke and Revolution types, top-coming or top-going action, 5 or 7 digits, right or left shaft, knob or key reset.

SEE—COMPARE—TEST. Ask your PIC Representative or write.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN-1129

WELDING WIRE

WELDING ELECTRODES

One source for all—Stainless Steels, Alloy Steels, Bronzes, Aluminum, Special Alloys

WELDSPOOL
The only chemically processed MICRO-SPOOLED wire for all makes of inert gas welding equipment.

WELDBEST
Standard grades of covered electrodes. Specialty grades engineered to your requirements.

SAME DAY DELIVERY ON MANY GRADES

Send for literature

WELDWIRE CO. Inc.
1927 E. Hagert St. Philadelphia 25, Pa.

If you write maker identify as IEN-1130

Massey GOVERNORS

Finest for 50 Years

FOR ENGINES AND PROCESS CONTROL

Type A-2 Centrifugals
for Diesel & gas engines,
for operating valves,
for safety shut-off at high speed or shutdown

Type OS Centrifugal Switches
To make or break contact at set speed.

Write for Catalogs A253 and OS254

MASSEY MACHINE CO.
802 Pearl St. Watertown, N. Y.

If you write maker identify as IEN - 1131

—for
"INSTRUMENT-QUALITY"
AIR
IN COMPRESSED AIR OPERATIONS...

HERE'S YOUR ANSWER!

HANKISON
MODEL B-30-D
Condensifilter

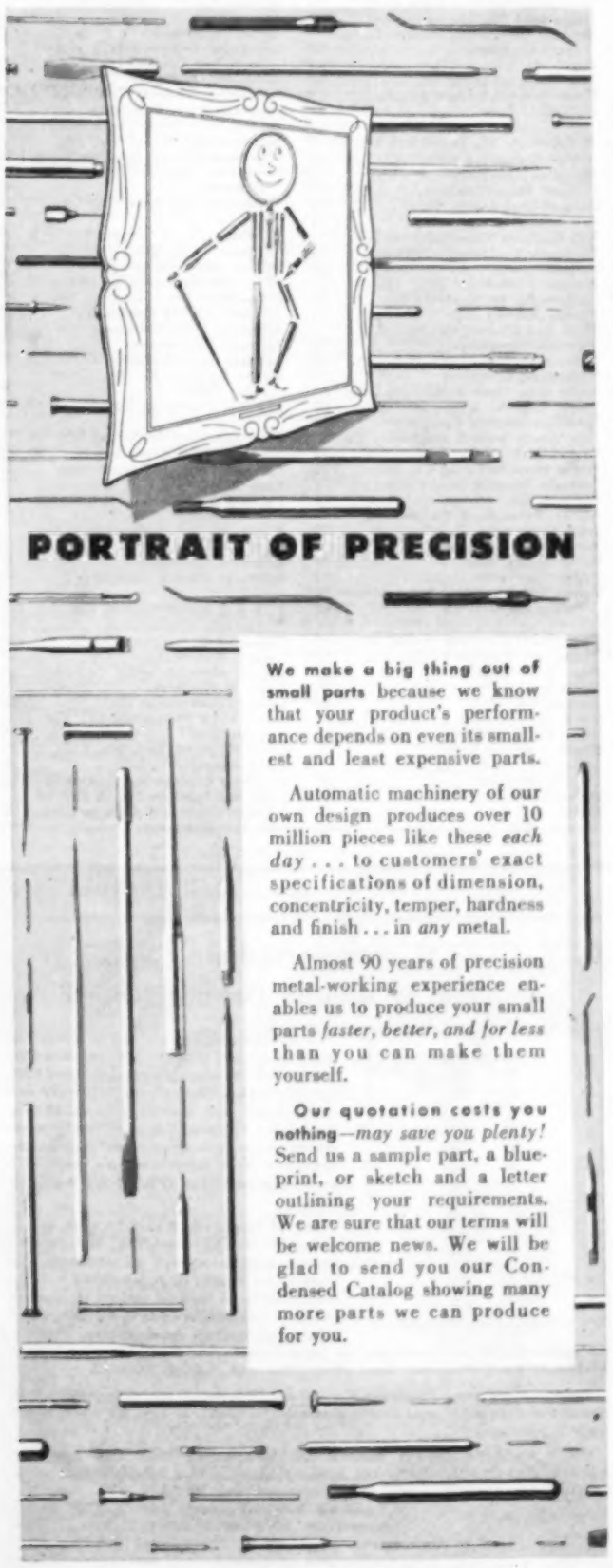
Featuring the New-Economical DISPOSABLE FILTER CARTRIDGE

Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D
For larger capacities, write for data on Model A-100.

HANKISON CORPORATION
350 BILTMORE BLDG. • 951 BANKSVILLE ROAD • PITTSBURGH 16, PA.

If you write maker identify as IEN - 1132



THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS
Makers of Torrington Needle Bearings

"I WISH I HAD"

(Continued from page 116)

SURPLUS . . "I wish we had a buyer for two new autoclaves made of flange carbon steel for operating pressure to 100 lb., ASME and Penna. approved and stamped. Round horizontal, approximately 36 in. in outside diameter by 108 in. in length, plus ASME dished head. A flat head with a 21 by 25 in. quick opening door is in one end. The units are in storage in Allentown, Penna." **IEN W-11**

SURPLUS . . "I wish we had a buyer for approximately 8,300 lb. of 1½ in. round stainless steel Type 303 bar stock. It is centerless ground and certified. We also have approximately 1,250 lb. of 1⅝ in. material of the same type of steel. Both are in storage in New York City." **IEN W-12**

SURPLUS . . "I wish we had a buyer for all or a part of our 150 surplus cabinets made from cold rolled and stainless steel. They are box type assemblies, measuring 38½ by 23½ by 21 inches. We will send an illustration and specifications on request. The stock is located in New York City." **IEN W-13**

If you write maker identify as IEN - 1134

HEATING . . Steam heated space unit, 16 sizes to 294,000 btu. per hour

Source: FEDDERS-QUIGAN CORPORATION
Hancock & Lalor Sts., Dept. IEN, Trenton 7, N. J.

Also for hot water

Series 17 designates a new line of steam heated space units in which copper tubing is expanded into die formed aluminum fins to form the heating element. Headers are employed at the top and bottom and the element is suspended in the housing by brackets that not only support it but also resist torsional stress during installation when pipe lines are being tightened in place. The saddle type mounting permits expansion and contraction.

Adjustable louvers provide vertical direction control of the heat delivered by the motor driven fan at the rear. The fan and motor are resiliently mounted to minimize vibration and noise. The fan assembly can be removed for inspection or cleaning. Illustrated technical data and selection tables are presented in 32 page catalog UHC-1.

If you write maker identify as IEN - 1135

SOLDERING . . Rosin and solder combine in wire form ready to use

Source: ALPHA METALS INC.
Box 34, Dept. IEN, Jersey City 4, N. J.

Test sample upon request

Cen-Tri-Core trade names a new combination of solder wire coated with rosin over which an outer solder sleeve is formed. The sleeve prevents any possibility of a rosin void that might interfere with the soldering action. The wire is available in a range of alloys, diameters and rosin percentages. The Energized rosin is non-corrosive and electrically non-conductive. It conforms to Federal Specification QQS-571B, Par. E-2A.

If you write maker identify as IEN - 1136

GAGE . . Dial indicator reads to 0.40 in. in 10 revolutions

Source: HOMESTRAND INCORPORATED
10 Homes Ave., Larchmont, N. Y.

Made in Sweden

Single graduations on the dial face of this new indicator read 0.001 inch. One revolution of the main hand reads 0.040 inch. A smaller counting hand is mounted above and to the right of the main pointer to count up to 10 revolutions for a maximum reading of 0.400 inch. The spindle connects to the pointer movement through a steel band rather than through a gear transmission. The new design provides high accuracy through the complete range. Zero is adjusted by turning a knurled knob at the top of the housing. Two limit indicating pointers are adjustable on the face. Standard construction includes jeweled bearings, graduations reading in 0.0005 and in 0.0001 in., are available in the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1137

. . . engineered to OUTLIVE your plant!

Famous Plastic Rock now unites with special steel grid reinforcing to form a practically indestructible industrial floor which withstands terrific abuse. Offered together for the first time as a complete unit—*everything included.* Non-skid, virtually wear-proof; perfect bonding, no spalling or loosening; for old or new floors of concrete or wood.

Put an end to floor maintenance. Get Bulletin 293-Q-1.

UNITED LABORATORIES, INC.
16803 Euclid Avenue, Cleveland 12, Ohio
FLOORING • ROOFING • SPECIAL PAINTS
Field Representatives Coast to Coast

If you write maker identify as IEN - 1138

Brand your equipment with pf decals

Tapered TIMKEN Roller BEARING EQUIPPED

• low cost
• good looking
• permanent

Your nameplate identifies your equipment, keeps your trademark before prospective buyers. PF decals are designed with your product in mind. They go on quickly and last indefinitely. What's more, if you require operating instructions or wiring diagrams, PF decals put across your story at comparatively little cost. It's the brightest way of branding your equipment or setting up instructions that stay.

Learn how PF decals can do a job for you. Art service, consultation, and estimates without obligation. Send today for free booklets, "Decal-Ways to Sales", "PF Window Valances and Window Signs" and "How leading advertisers use decals".

PALM, FECHTELER & CO.
85 MAPLE STREET • Dept. IEN-1 • WEEHAWKEN, N. J.

If you write maker identify as IEN - 1139

standardize on standard

HALLOWELL WORK BENCHES

HALLOWELL FEATURES

Sturdy, rigid—require no bolting to floor
4 lengths, 3 widths, 3 heights—all standard
3 top materials—steel, Presdwood on steel, laminated wood
Use them as single units or continuous benches of any length
Functional design, neat appearance

Standardized construction with *standard* accessories permits you to *custom build* HALLOWELL benches to fit your requirements. Stocked and sold by industrial distributors. Write for literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

HALLOWELL SHOP EQUIPMENT DIVISION
SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-1140

TRY IT!

MAIL COUPON!

THIS TOUGH CONCRETE PATCH

SETS INSTANTLY!

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut—tamp smooth—truck over! No waiting! INSTANT-USE bonds tight to old concrete—right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment.

MAIL COUPON for TRIAL OFFER and FREE HANDBOOK

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
3606-Z Filbert St., Philadelphia 1, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE — no obligation. (Clip and attach Coupon to Company letterhead).

Name .....

Title .....

Company .....

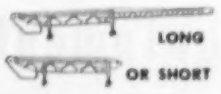
Address .....

If you write maker identify as IEN-1141

Where can *you* use this new FARQUHAR *EXPAND-O-VEYOR?*

Completely adjustable in height and length!

Expand-o-veyor expands or contracts as your work requires!



Eliminates lost time caused by shifting equipment!

Use this new Farquhar *Expand-O*-Veyor at maximum length and height settings one day ... at minimum settings, the next day. Or, operate it at any combination of height and length positions you desire. Perfect for loading and unloading trucks—can be shortened or expanded as the truck becomes loaded or emptied. Get more information about this new *Expand-O*-Veyor's versatility today. Write to the address shown below, telling us what you move. There's no obligation, of course.

OLIVER Farquhar CONVEYORS

FREE! "Owners Report"—a booklet of case histories describing money-saving Farquhar conveyor installations. Write: A. B. FARQUHAR Co., Div. of The Oliver Corp., Dept. J-32, York Pa.

POWER-BELT & GRAVITY CONVEYORS

If you write maker identify as IEN-1142

Now Ready!

NEW CATALOG ON TUTHILL MODEL CK HIGH PRESSURE PUMPS

For Designers

For Production and Maintenance Men

Write for this new Tuthill Model CK Catalog No. 103.

It's a helpful guide to selecting the right pump for hydraulic service where the operating pressure does not exceed 400 p.s.i. Included is complete data on mechanically-sealed units and automatic reversing types in capacities from 5 to 200 g.p.m.

A copy is yours for the asking.

TUTHILL PUMP COMPANY
Dependable Rotary Pumps since 1927
939 East 95th Street, Chicago 19, Illinois

Canadian Affiliate: Ingersoll Machine & Tool Company, Ltd. Ingersoll, Ontario, Canada

JANUARY 1954

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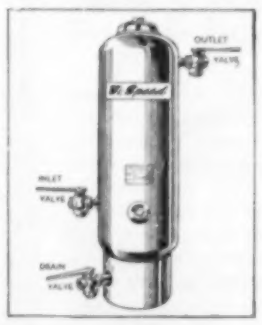

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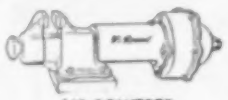

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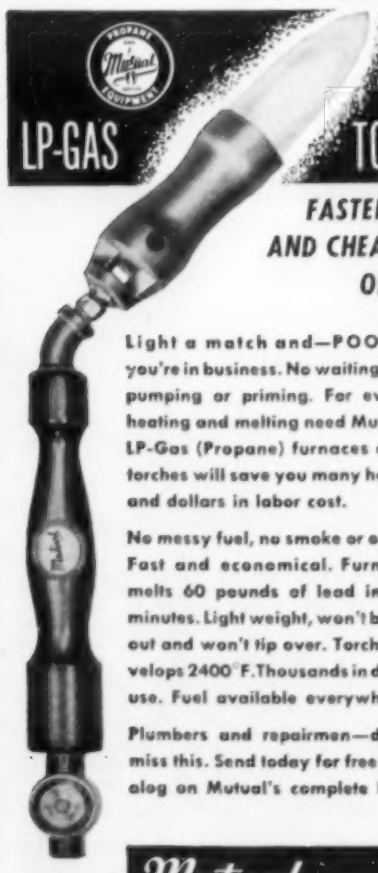

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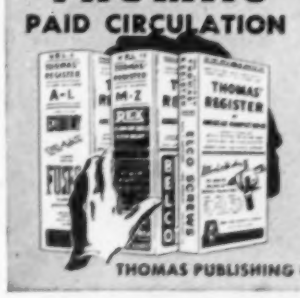

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STONHARD RESURFACER has exhibited its fire resistant qualities many times and usually brings about a reduction in fire insurance rates. It's ideal for splintered wood or rutted concrete floors. A patch or complete overlay requires no special skill, no expensive tools. Write for full details.

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Building Maintenance Materials since 1922
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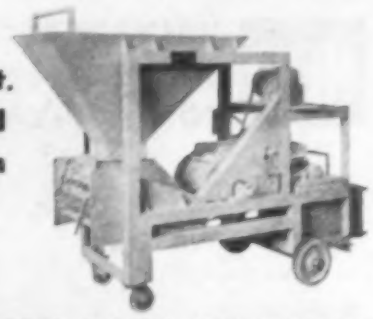
If you write maker identify as IEN-1150

Separates 7 cu. ft. load of parts and tumbling chips in Just 10 minutes



STEARNS MAGNETIC PARTS SEPARATOR

You can separate steel parts from deburring chips in minutes instead of hours with a Stearns Magnetic Parts Separator. As mixture cascades from feeder, powerful Stearns Drum-Type Magnet lifts parts to belt which conveys them to demagnetizer. Non-magnetic chips fall into suitable receptacle for re-use.

Check These Special Features

- Non-Choking Adjustable Feeder
- Parts Fully Demagnetized
- Completely Self-Contained Unit
- No Operating Expense — No current needed.
- Positive Separation — Lift principle eliminates entrapment.
- Protection for Parts — Hopper is rubber-lined, feeder rubber-lined.

Find out how a Stearns Parts Separator can cut your handling costs. Write today for Bulletin 110. 1064

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

STEARNS MAGNETIC, INC.
626 South 28th Street Milwaukee 46, Wisconsin

If you write maker identify as IEN-1151

"The Boss certainly appreciated the Office Boy's suggestion that we install an Alvey-Ferguson Conveyor System in our plant."

For Engineered Conveying Systems

THE ALVEY-FERGUSON COMPANY

Since 1901
339 Disney Street CINCINNATI 9, OHIO
Representatives in Principal Cities

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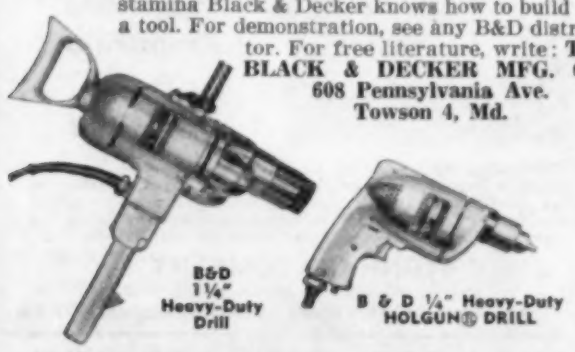
Black & Decker OFFERS WORLD'S MOST COMPLETE LINE OF PORTABLE ELECTRIC DRILLS

TOWSON, MD.—The wide selection of drills in the complete Black & Decker line includes the right tool for any portable drilling job. These models range from ¼" to 1¼" capacity . . . offer a choice of speed, power, and handle arrangement for easiest operation. Whether your job calls for a standard or a heavy-duty model, you get a powerful B&D-built motor, perfect balance plus all the stamina Black & Decker knows how to build into a tool. For demonstration, see any B&D distributor. For free literature, write: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave. Towson 4, Md.



LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with a manufacturer in the Middle West needing the services of a man with 10 years experience in all phases of industrial engineering. I am employed at present as a Methods Engineer for a processing manufacturer in Ohio." **IEN W-1**

ENGINEERING . . "I wish I had contact with concerns who need the services of a metallurgical consultant on a part time basis. I am located in Southern New England." **IEN W-2**

ENGINEER . . "I wish I had contact with a small or medium size manufacturer who can use the services of a young industrial engineer with experience in production management, time study, systems and methods. I am at present in New York City." **IEN W-3**

ENGINEER . . "I wish I had contact with a manufacturer who can use the services of an engineer with 12 years of experience in plant production, development engineering and administration. I am located at present in New York City." **IEN W-4**

SURPLUS . . " I wish we had a buyer for a Mercury Banty 3-wheel gasoline industrial tow truck, Model A-440-21 and for an Onan portable battery charger rating 3,500 watts. It is Model 24-35. The truck was new in 1950. Both are in storage in Newport, Ky." **IEN W-5**

SURPLUS . . "I wish we had a buyer for a 14 in. No. 2 Southworth turret lathe with coolant equipment, driving motor and a pneumatic feed for bar stock. The lathe has a 1-in. hole through the spindle, a plain head with an automatic chuck for collets. It mounts a 6-hole hexagon turret with independent stops and a lever type cross slide. The lathe is in storage in St. Louis." **IEN W-6**

SURPLUS . . "I wish we had a buyer for various spare parts to apply on a No. 31 Ex-Cell-O thread grinder, a ⅝ in. Cleveland Automatic and on a National Acme machine. We have prepared a list of these parts and will submit it on request. The parts are in stock in Terryville, Conn." **IEN W-7**

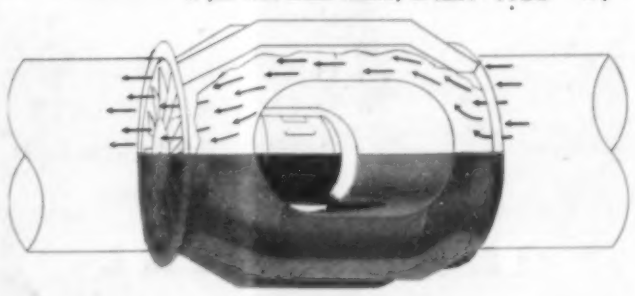
SURPLUS . . "I wish we had contact with a purchaser for all or a part of our 27,000 lb. surplus stock of 1 by 0.0359 in. galvanized cold rolled strip. The strip is in 150 coils in storage in St. Paul, Minn." **IEN W-8**

SURPLUS . . "I wish I had a buyer for 19 No. 3 T & J double acting pneumatic cylinders. Bore is 4½ in. in diameter. Stroke is 9 inches. The design is non-cushioned. The piston rod is equipped with a connection clevis. The cylinders are in storage in Asheville, N. C." **IEN W-9**

SURPLUS . . "I wish we had a buyer for all or a part of our surplus stock of packing materials. The stock amounts to about 30,000 lb of plain asbestos, asbestos wire-inserted, and asbestos rubber core. Sizes range from ⅛ to 1 in. and are distributed among seven front line packing manufacturers. We will send you a stock list on request. Spokane, Wash." **IEN W-10**

(Please turn to page 113)

If you write maker identify as IEN-1153



Bifurcator fan installs in duct, yet motor stays clean, cool, accessible

DIRECT WAY TO EXHAUST HOT FUMES

Bifurcator fan by-passes hot, corrosive, flammable or explosive fumes around motor which is located in an isolated chamber. Fumes are exhausted at top efficiency because there is no directional change in the air stream. Bifurcator can be installed just like a section of duct and at any angle. Capacities to 45,000 CFM. Fan wheel diameters to 48". Write for illustrated catalog and free copy of "Summary of Design Data for Exhaust Systems." Address Dept. N154.

DeBothezat Fans

Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

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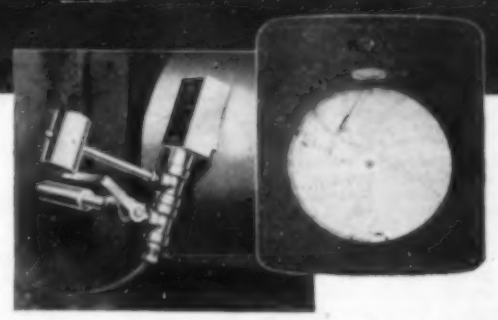
NOW! CONTINUOUS MEASUREMENT OF ROLL SURFACE TEMPERATURES



SPECIFICALLY DEVELOPED for calender rolls, dryer rolls and other moving surfaces used in processing . . . plastics, rubber, textiles, metals, paper, food. Saves steam, reduces waste, improves product quality.

The system consists of an *entirely new type* of measuring head . . . plus a Dynalog *Electronic Recorder or Controller. Minimizes ambient or radiant temperature errors. No scoring of the roll. Operating range: —40°F to +350°F, higher under special conditions. Write for Bulletin 405.

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TINS ALL METALS

Difficult tinning problems are being solved with a new powdered solder containing flux, called Farco Tinning Compound which permits jobs heretofore considered impossible, such as tinning cast iron water jackets and cylinder heads, cast steel bearings, pipes, cylinders and stainless steel equipment. The powerful chemical formula will lift the oxides from aluminum, and on other metals is more drastic than ordinary acids. Makes it possible to lift the scale and tin black iron in one operation. Stability of the new powder makes it possible to judge heat on large bearings by its action in turning liquid when proper temperature for tinning is reached. Although strong enough to remove scale, dirt, and tin rusty surfaces thoroughly, it is completely stable and will not liquefy in can. When used on gasoline motors, Diesel and marine engine bearings it is reported to increase performance life 100%. The compound may be applied with either torch or soldering iron depending on thickness of metal, and any good grade of solder may be used. Packaged in 1½ lb. cans, price $3.00 f.o.b. **Advt.**

FARRELLOY CO.

1249 North 26th Street Philadelphia 21, Pa.

If you write maker identify as IEN-1156

NEW FLOORS In 24 Hours

Hard Mastic

HEAVY DUTY • DUSTPROOF • WATERPROOF
FIRE-RESISTANT • RESTFUL • QUIET
SLIPROOF • SANITARY

Install "PERMAFLEX" any thickness required over the old or new Floors, Walks or Drives . . . Bonds perfectly—never comes loose, 3000 lbs. pressure per square inch, will not rut . . . Outwears any other known flooring.

For interior or exterior use . . . Floors installed on Friday night and Saturday are ready for use Monday . . . No chipping. No dust . . . No production delays . . . No need to move machinery . . . finish right up to it.

IF DESIRED, OUR CONTRACT DEPARTMENT WILL INSTALL "PERMAFLEX" FLOORS FOR YOU UP TO 30,000 SQUARE FEET PER DAY.

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